WHAT IS CLAIMED IS:

1. A network management equipment for managing a network system including a plurality of stations, a communication line provided between said stations, and one or a plurality of nodes which are set in each of said station and connected to each other through said communication line,

said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing a state of occurrence of a failure in said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said display processing means on said display unit,

wherein said display controlling means displays an area map of an area in which said network system is set on said display unit;

displays on said area map a plurality of station icons respectively associated with said stations and a line associated with said communication line;

displays a plurality of said station icons in a display mode which varies depending on presence/absence

of a failure in each corresponding station; and

displays said line in a display mode which varies depending on presence/absence of a failure in said corresponding communication line.

2. The network management equipment according to claim 1, wherein said display controlling means displays on said area map a current time indicated by the universal time coordinated (Universal Time Coordinated: UTC) and a standard time of each area in which a plurality of said stations are respectively set.

3. A network management equipment for managing a network system including a plurality of nodes based on notification information transmitted from a plurality of said nodes, said network management equipment comprising:

a display unit;

operating means for accepting click operations by a user;

information acquiring means for acquiring notification information including alarm information respectively transmitted from a plurality of said nodes; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a first button on a screen of said display unit;

displays a first window on said screen of said display unit when said first button is clicked by said operating means; and

displays a list of notification information acquired by said information acquiring means in said first window in a text format together with a plurality of attributes for characterizing each set of said notification information.

4. The network management equipment according to claim 3, wherein said display controlling means displays a second button on said screen of said display unit;

displays a second window on said screen of said display unit when said second button is clicked by said operating means;

displays an attribute specification section for arbitrary selecting and specifying a plurality of said attributes in said second window; and

selectively displays in said first window notification information having attributes specified in said attribute specification section.

5. The network management equipment according to claim 3, wherein said display controlling means displays a third button on said screen of said display unit;

displays a third window on said screen of said display unit when said third button is clicked by said

operating means;

displays in said third window a section for setting an order for displaying said attributes in said first window; and

rearranges an order of said attributes displayed in said first window in accordance with said order set in said section.

6. The network management equipment according to claim 3, wherein said display controlling means displays a fourth button on said screen of said display unit;

displays a fourth window on said screen of said display unit when said fourth button is clicked by said operating means; and

displays in said fourth window a list of nodes which is targets of management by its own apparatus, and

wherein when one or more nodes among nodes displayed in said fourth window are specified by said operating means, said information acquiring means masks alarm information included in notification information transmitted from said specified nodes.

7. The network management equipment according to claim 3, further comprising an alarm buzzer which sounds under predetermined conditions; and

buzzer controlling means for controlling sounding of said alarm buzzer,

wherein said display controlling means displays a fifth button on said screen of said display unit;

displays a fifth window on said screen of said display unit when said fifth button is clicked by said operating means; and

displays in said fifth window a condition setting section for setting conditions for sounding said alarm buzzer; and

wherein said buzzer controlling means sounds said alarm buzzer under conditions set in said condition setting section in said fifth window.

8. A network management equipment provided to a network system including a plurality of ring networks having a plurality of nodes connected to each other in a ring form through a communication line, said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing an occurrence state of a failure in said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a sixth button on a screen of said display unit;

displays a sixth window on said screen of said display unit when said sixth button is clicked by said operating means;

displays in said sixth window a plurality of headers respectively associated with a plurality of said ring networks;

displays a plurality of said headers in a display mode which varies depending on presence/absence of a failure in respective corresponding ring networks;

displays in said sixth window a view showing a configuration of a ring network corresponding to any header clicked by said operating means when said header is clicked by said operating means; and

displays a plurality of nodes shown in said view of said configuration of said ring network in display modes which differ from each other depending on presence/absence of a failure in said each node.

9. The network management equipment according to claim 8, wherein when each of said nodes includes a plurality of shelves,

said display controlling means displays a seventh window on said screen of said display unit when any node shown in said type drawing is clicked by said operating means;

displays a type drawing showing a shelf

configuration of said clicked node in said seventh window; and

displays a plurality of shelves shown in said type drawing in display modes which differ from each other depending on presence/absence of a failure in said each shelf.

10. A network management equipment for managing a network system including a plurality of stations, a communication line provided between said stations, and one or a plurality of nodes which are respectively provided in said stations and connected to each other through said communication line, said network management equipment comprising:

a display unit;

operating means for accepting first and second click operations different from each other by a user;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing an occurrence state of a failure in said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a

plurality of station icons respectively associated with said stations on a screen of said display unit;

displays a plurality of said station icons in a display mode which varies depending on presence/absence of a failure in each corresponding station;

displays an eighth window on said screen of said display unit when any one of said station icons is clicked by said first click operation of said operating means;

displays in said eighth window one or a plurality of node icons respectively associated with said nodes set in a station corresponding to said clicked station icon; and

displays one or a plurality of said node icons in a display mode which varies depending on presence/absence of a failure in each corresponding node.

11. The network management equipment according to claim 10, wherein when each of said nodes includes a plurality of shelves,

said display controlling means displays on said screen of said display unit a ninth window when any node icon displayed in said eighth window is clicked;

displays a type drawing showing a shelf configuration of said clicked node in said ninth window; and

displays a plurality of shelves shown in said type

drawing in display modes which differ from each other depending on presence/absence of a failure in each of said shelves.

12. The network management equipment according to claim 10, wherein when each of said nodes includes a plurality of shelves,

said display controlling means displays a tenth window on said screen of said display unit when any of said station icons is clicked by said second click operation of said operating means;

displays in said tenth window a list of nodes set in a station corresponding to said clicked station icon;

displays a ninth window on said screen of said display unit when any node shown in said list is selected by said operating means;

displays in said ninth window a type drawing showing a shelf configuration of said selected node; and

displays a plurality of shelves shown in said type drawing in display modes which differ from each other depending on presence/absence of a failure in each of said shelves.

13. The network management equipment according to claim 9, wherein when each of a plurality of said shelves includes one or a plurality of cards,

said display controlling means displays an 11th

window on said screen of said display unit when any one of a plurality of said shelves shown in said type drawing is clicked by said operating means;

displays a view showing a card configuration of said clicked shelf in said 11th window; and

displays a plurality of cards shown in said view of said card configuration in display modes which differ from each other depending on presence/absence of a failure in each of said cards.

14. A network management equipment provided in a network system including a plurality of ring networks,

each of a plurality of ring networks including a plurality of nodes and a traffic bypass function,

a plurality of said nodes being connected to each other in a ring form through a communication line,

said communication line including a working system line and a preliminary system line, and

said traffic bypass function being a function which causes service traffic transmitted through said working system line to make a detour to said preliminary line, and being a function which enters either an active status or a normal status,

said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing statuses of said traffic bypass function in said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a seventh button on a screen of said display unit;

displays a 12th window on said screen of said display unit when said seventh button is clicked by said operating means;

displays in said 12th window a plurality of icons respectively associated with a plurality of said ring networks;

displays a plurality of said icons in a display mode which varies depending on said active status or said normal status which said traffic bypass function in said each corresponding ring network enters; and

displays a plurality of said icons in a display mode which varies depending on whether said status of said traffic bypass function in said each corresponding ring network has been confirmed by an operator of its own apparatus.

15. The network management equipment according to claim 14, wherein said display control button displays in a blinking manner an icon corresponding to a ring

network that said status of said traffic bypass function has not been confirmed; and

displays in a lit manner an icon corresponding to a ring network that said status of said traffic bypass function has been confirmed.

16. A network management equipment for managing a network system including a plurality of nodes based on notification information transmitted from a plurality of said nodes, said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

storing means for accumulating a history of said notification information acquired by said information acquiring means;

information processing means for managing said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a 13th window on a screen of said display unit; and

displays in said 13th window a retrieval condition specification section for specifying retrieval

conditions for retrieving desired notification information from said history accumulated in said storing means,

wherein said information processing means retrieves from said history accumulated in said storing means notification information according to retrieval conditions specified in said 13th window,

wherein said display controlling means displays a 14th window on said screen of said display unit; and

displays in said 14th window notification information retrieved by said information processing means in a text format together with a plurality of attributes for characterizing said retrieved notification information.

17. The network management equipment according to claim 16, further comprising operating means for accepting click operations by a user,

wherein said display controlling means displays an eighth button on said screen of said display unit;

displays a 15th window on said screen of said display unit when said eighth button is clicked by said operating means;

displays in said 15th window an attribute specification section for arbitrarily selecting and specifying a plurality of said attributes; and

selectively displays in said 14th window notification information having attributes specified in

said attribute specification section.

18. The network management equipment according to claim 17, wherein said display controlling means displays a 16th window on said screen of said display unit when arbitrary notification information is clicked by said operating means in said 14th window; and

displays in said 16th window a section for causing an operator of its own apparatus to input memo data written in connection with said clicked notification information, and

wherein said information processing means gives said memo data inputted in said 16th window to said clicked notification information.

19. The network management equipment according to claim 16, further comprising operating means for accepting click operations by a user,

wherein said display controlling means displays a ninth button on said screen of said display unit;

displays a 17th window on said screen of said display unit when said 9th button is clicked by said operating means; and

displays in said 17th window:

a section for selectively specifying allowance or inhibition of writing new notification information with respect to a history accumulated in said storing means;

a section for specifying either overwriting of new notification or abortion of writing of new notification

when a storage area in said storing means is full;

a section for specifying a maximum number of histories accumulated in said storing means; and

a section for setting a threshold value of a ratio of a storage area in which said histories in said storing means are accumulated, and

wherein said information processing means accumulates said histories in said storing means in accordance with contents set in said 17th window; and

generates an alarm to an operator of its own apparatus when a ratio of said storage area in which said histories in said storing means are accumulated may exceed said threshold value.

20. The network management equipment according to claim 16, further comprising operating means for accepting click operations by a user,

wherein said display controlling means displays a 10th button on said screen of said display unit;

displays an 18th window on said screen of said display unit when said 10th button is clicked by said operating means; and

displays in said 18th window:

a section for specifying a node as an operation target and setting a maximum value of a size of a storage resource area for a history accumulated in said node; and

a section for individually setting a size of a

storage resource area of a notification information history to be accumulated, and

wherein said information processing means varies a size of a storage resource area for said history in an arbitrary node in accordance with contents set in said 18th window.

21. A network management equipment for managing a network system including a plurality of nodes based on notification information transmitted from a plurality of said nodes, said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

storing means for accumulating a history of said notification information acquired by said information acquiring means;

information processing means for managing said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays an 11th button on a screen of said display unit;

displays a 19th window on said screen of said

display unit when said 11th button is clicked by said operating means; and

displays in said 19th window a retrieval condition specification section for specifying retrieval conditions for retrieving desired notification information from a history accumulated in said storing means,

wherein said information processing means retrieves notification information satisfying said retrieval conditions specified in said 13th window from said history accumulated in said storing means, and

wherein said display controlling means displays a 20th window on said screen of said display unit; and

graphs out and displays a result of retrieval of notification information by said information processing means in said 20th window.

22. The network management equipment according to claim 21, wherein said display controlling means displays in said 20th window a plurality of graphs which differ in accordance with each object of retrieval specified under said retrieval conditions.

23. The network management equipment according to claim 21, wherein said display controlling means displays a marker which can move on a horizontal axis of each graph displayed in said 20th window; and

displays a data value on a vertical axis corresponding to a position of said marker on said

horizontal axis by a numeric figure.

24. The network management equipment according to claim 21, wherein said display controlling means varies a vertical axis scale of a graph displayed in said 20th window in accordance with a maximum value of data to be displayed or in accordance with setting by a user.

25. The network management equipment according to claim 21, wherein said display controlling means displays 12th buttons in accordance with each graph displayed in said 20th window;

displays a 21st window on said screen of said display unit when any one of said 12th button is clicked by said operating means; and

opens said 21st window which displays in a table form a result of retrieval of said quality information shown in a graph concerning said clicked 12th button.

26. The network management equipment according to claim 21, wherein said display controlling means displays a 22nd window on said screen of said display unit when arbitrary notification information is clicked by said operating means in said 21st window; and

displays in said 22nd window a section for causing an operator of its own apparatus to input memo data which is written in connection with said clicked notification information, and

wherein said information processing means gives said memo data inputted in said 22nd window to said

clicked notification information.

27. The network management equipment according to claim 21, further comprising printout means,

wherein said display controlling means displays a 13th button on said screen of said display unit;

displays a 23rd window on said screen of said display unit when said 13th button is clicked by said operating means; and

displays in said 23rd window:

a period specification section for specifying any of daily basis, monthly basis, or annual basis as a retrieval period of quality information; and

a quality information attribute specification section for specifying attributes of quality information to be retrieved, and

wherein said information processing means retrieves desired quality information from a history of said accumulated quality information in accordance with a content specified in said 23rd window; and

prints out a result of retrieval to said printout means.

28. The network management equipment according to claim 21, wherein said display controlling means displays a 14th button on said screen of said display unit;

displays a 24th window on said screen of said display unit when said 14th button is clicked by said

operating means; and

displays in said 24th window:

an operation target specification section for specifying a node as an operation target, and a channel and a section thereof;

a section for specifying whether quality information measured for said operation target specified in said operation target specification section is to be notified in accordance with each type thereof;

a section for setting an importance level of quality information measured for said operation target specified in said operation target specification section in accordance with each type thereof; and

a section for setting a threshold value used for notifying quality information measured for said operation target specified in said operation target specification section, and

wherein said information processing means notifies a node as said operation target of a content specified in said 24th window, and notifies said node of quality information in accordance with said content.

29. A network management equipment for managing a network system including a plurality of nodes based on notification information transmitted from a plurality of said nodes, said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing an occurrence state of an alarm in said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a 16th button on a screen of said display unit;

displays a 26th window on said screen of said display unit when said 16th button is clicked by said operating means; and

displays in said 26th window:

a first section for specifying an operation target of severity of said alarm; and

a second section for selecting an occurrence factor of said alarm for said operation target specified in said first section;

reads a current set state of severity of said specified alarm occurrence factor with respect to a node including said operation target and displays a list of read results in accordance with each occurrence factor when said operation target and said alarm

occurrence factor are specified in said 26th window, and

wherein said information processing means individually sets severity for an operator of its own apparatus in accordance with each alarm occurrence factor displayed in a list in said 26th window; and

sets severity of each set alarm occurrence factor with respect to said node of said operation target.

30. The network management equipment according to claim 29, wherein said display controlling means displays a 17th button on said screen of said display unit;

displays a 27th window on said screen of said display unit when said 17th button is clicked by said operating means; and

displays in said 27th window:

a node selection section for causing an operator of its own apparatus to select a node as an operation target; and

an operation mode specification section for causing an operator of its own apparatus to specify an operation mode of said node selected in said node selection section to either a maintenance state mode or a non-maintenance state mode, and

wherein said information processing means sets said operation mode specified in said operation mode specification section with respect to said node

selected by said node selection section.

31. The network management equipment according to claim 29, wherein said display controlling means displays an 18th button on said screen of said display unit;

displays a 28th window on said screen of said display unit when said 18th button is clicked by said operating means; and

displays in said 28th window:

a section for causing an operator of its own apparatus to specify a node as an operation target and shelves thereof, and set transmission or non-transmission of a maintenance signal to said specified operation target, and

wherein said information processing means sets a content set in said 28th window with respect to a node including said operating target.

32. The network management equipment according to claim 29, wherein said display controlling means displays a 19th button on said screen of said display unit;

displays a 29th window on said screen of said display unit when said 19th button is clicked by said operating means;

displays in said 29th window a section for causing an operator of its own apparatus to specify a node as an operation target and shelves thereof, and set a

threshold value of an alarm indicative of signal quality degradation with respect to said specified operation target; and

sets said threshold value determined in said section with respect to a node including said operation target.

33. A network management equipment provided in a network system including a plurality of ring networks,

each of a plurality of said ring networks including a plurality of nodes and a traffic bypass function,

a plurality of said nodes being connected with each other in a ring form through a communication line in which a plurality of paths are multiplexed,

said communication line including a working system line and a preliminary system line,

said traffic bypass function is a function for causing service traffic transmitted through said working system line to make a detour to said preliminary system line,

said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing a state of said traffic bypass function in said network system

based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays on a screen of said display unit a clickable button for displaying on said screen of said display unit a window for setting parameters concerning said traffic bypass function.

34. The network management equipment according to claim 33, wherein said display controlling means displays a 21st button on said screen of said display unit;

displays a 30th window on said screen of said display unit when said 21st button is clicked by said operating means;

and displays in said 30th window a section for causing an operator of its own apparatus to specify a transmission interval as an operation target and set values of said parameters concerning said traffic bypass function with respect to said specified operation target, and

wherein said information processing means sets values determined in said section with respect to a node concerning said operation target.

35. The network management equipment according to

claim 33, wherein said display controlling means displays a 22nd button on said screen of said display unit;

displays a 31st window on said screen of said display unit when said 22nd button is clicked by said operating means; and

displays in said 31st window a section for causing an operator of its own apparatus to specify a switching interval as an operation target, and setting forcible switching with respect to said specified operation target, and

wherein said information processing means sets a switching state set in said 31st window with respect to a node concerning said operation target.

36. The network management equipment according to claim 33, wherein said display controlling means displays a 23rd button on said screen of said display unit;

displays a 32nd window on said screen of said display unit when said 23rd button is clicked by said operating means;

displays in said 32nd window a set status of a path in said network system with selected ring network; and

divides a display area in said 32nd window in association with an interval between nodes belonging to said selected ring network, and displays in said

divided area an arrow associated with each path existing in said divided area.

37. The network management equipment according to claim 36, wherein said display controlling means displays both a path as a symbol indicative of existence of a path and a current path indicative of a current state of said path.

38. The network management equipment according to claim 36, wherein said display controlling means divides said divided area in said 32nd window into an area corresponding to a working system and an area corresponding to a preliminary system, displays a second arrow forming a pair with said arrow, and displays said second arrow in either said area corresponding to said working system or said area corresponding to said preliminary system in accordance with a state of a path corresponding to said pair of arrows.

39. The network management equipment according to claim 36, wherein when a failure is generated in said network system, said display controlling means displays a display mode of said divided area in said 32nd window corresponding to an interval of said failure in distinction from an area in which no failure is generated.

40. The network management equipment according to claim 36, wherein said display controlling means

displays in said 32nd window a scroll button for scrolling a display content in said 32nd window.

41. The network management equipment according to claim 36, wherein said display controlling means displays each identifier used for discriminating a path corresponding to said arrow in association with said arrow displayed in said 32nd window.

42. The network management equipment according to claim 36, wherein said display controlling means displays information indicative of a position to which said path corresponding to said arrow displayed in said 32nd window is dropped in association with said arrow.

43. The network management equipment according to claim 42, wherein said information indicative of said position to which said path is dropped includes at least a low-speed side channel number of a node to which said path is dropped and information indicative of a type of concatenation of said path.

44. The network management equipment according to claim 36, wherein said display controlling means displays a diagnostics button on said screen of said display unit; and

displays a 33rd window on said screen of said display unit when said diagnostics button is clicked by said operating means,

wherein said information processing means diagnoses in accordance with each node whether a first

data base which is managed in accordance with each ring network and indicative of set statuses of all the paths which exist in said ring network is matched with a second data base which is managed in accordance with each node and indicative of the corresponding relationship between a high-speed side time slot and a low-speed side channel of said node,

wherein said display controlling means displays a 33rd window on said screen of said display unit; and

displays a result of diagnosis of matching of said first and second data bases diagnosed by said information processing means in said 33rd window, and

wherein said information processing means executes processing for matching said first and second data bases with respect to a node concerning said result of diagnosis when it is determined that said first and second data bases are not matched with each other.

45. The network management equipment according to claim 36, wherein said display controlling means specifies a node, and displays on said screen of said display unit a 24th button used for asking said specified node for a request for releasing a resource which is not used in said specified node.

46. The network management equipment according to claim 33, wherein said display controlling means displays on said screen of said display unit a 25th button for locking or unlocking the operation of said

traffic bypass function by an operator of its own apparatus.

47. The network management equipment according to claim 33, wherein said display controlling means displays on said screen of said display unit a 26th function button for causing an operator of its own apparatus to specify a node and set how to take an operation clock in said specified node.

48. A communication path setting method in a network management equipment with a display unit which is provided in a network system including a plurality of ring networks,

each of a plurality of said ring networks including a plurality of nodes connected to each other in a ring form through a communication line in which a plurality of communication paths are multiplexed,

said method comprising:

a step of selecting any ring network, dividing a screen of said display unit into a plurality of areas in association with intervals between nodes belonging to said selected ring network, and displaying in said divided areas each arrow corresponding to each communication path existing in said interval;

a first step of specifying a low-speed side channel of a node as a start point of a communication path to be set on said screen;

a second step of specifying a low-speed side

channel of a node as an end point of said communication path to be set on said screen;

a third step of displaying an arrow associated with said communication path to be set in a display area corresponding to a node interval specified in said first and second steps;

a fourth step of repeating said first to third steps when there is any other communication path to be set;

a fifth step of transmitting a request for setting a communication path corresponding to said arrow associated with said communication path to be set to a node concerning formation of said communication path; and

a sixth step of causing a node which has accepted said request for setting said communication path to form a new communication path based on said request.

49. The communication path setting method according to claim 48, wherein said first and second steps also perform specification of a type of concatenation of said communication path to be set as well as specification of a low-speed side channel of a node.

50. The communication path setting method according to claim 49, wherein when said communication path to be set is a dual homing path, said method further comprises a seventh step of specifying a

low-speed side channel of a node as an intermediate drop point of said communication path to be set, and

wherein said first, second and seventh steps also perform setting of a node type in addition to specification of a low-speed side channel of a node.

51. The communication path setting method according to claim 48, wherein said communication line includes a working system line and a preliminary system line, and

wherein when each of a plurality of said ring networks includes a traffic bypass function for causing service traffic transmitted through said working system line to make a detour to said preliminary system line, said sixth step includes:

an eighth step of causing a node which has accepted a request for setting a communication path to lock said traffic bypass function of its own apparatus;

a ninth step of forming a new communication path based on said request for setting a communication path upon completion of said eight step; and

a tenth step of unlocking said traffic bypass function upon completion of said ninth step.

52. A network management equipment for managing a network system including a plurality of nodes having a plurality of boards based on notification information transmitted from a plurality of said node, said network management equipment comprising:

a display unit;

operating means for accepting click operations by a user;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a 27th button on a screen of said display unit;

displays a 34th window on said screen of said display unit when said 27th button is clicked by said operating means; and

displays in said 34th window a section for causing an operator of its own apparatus to select one of said nodes existing in said network system and specify a low-speed board of said selected node, and

wherein said information processing means deletes said low-speed side board selected in said 34th window from supervisory control targets of its own apparatus.

53. The network management equipment according to claim 52, wherein said display controlling means displays a 28th button on said screen of said display

unit;

displays a 35th window on said screen of said display unit when said 28th button is clicked by said operating means;

displays in said 35th window a section for causing an operator of its own apparatus to specify an arbitrary node and specify a type of notification information transmitted from said specified node, and

wherein said information processing means reads set states of destinations of said notification information specified in said 35th window from said specified node and displays a list of said set states in said 35th window;

causes a user to set allowance or inhibition of notification of said specified notification information with respect to said destinations displayed in said list; and

sets a content set in said 35th window with respect to said specified node.

54. A network management equipment provided in a network system including a plurality of nodes, said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing said

network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a 29th button on a screen of said display unit;

displays a 36th window on said screen of said display unit when said 29th button is clicked by said operating means; and

displays a list of operators who are allowed to login to its own apparatus in said 36th window while associating a name of each operator with an expiration date of a password and an access level of said operator.

55. The network management equipment according to claim 54, wherein said display controlling means displays a 30th button on said screen of said display unit;

displays a 37th window on said screen of said display unit when said 30th button is clicked by said operating means; and

displays in said 37th window:

a section for causing an operator of its own apparatus to input a name of said operator; and

a section for causing said operator to input a password of said operator and an access level of said operator, and

wherein said information processing means newly registers said operator inputted in said 37th window as a user who can login to its own apparatus.

56. The network management equipment according to claim 54, wherein said display controlling means displays a 31st button on said screen of said display unit;

displays a 38th window on said screen of said display unit when said 31st button is clicked by said operating means; and

displays in said 38th window a section for causing an operator of its own apparatus to select an arbitrary node in said network system,

wherein said information processing means reads names of network management equipments registered to said node selected in said 38th window from said selected node, and

wherein said display controlling means displays in said 38th window a list of said names of network management equipments read by said information processing means.

57. The network management equipment according to claim 56, wherein said display controlling means displays a 32nd button on said screen of said display unit;

displays a 39th window on said screen of said display unit when said 32nd button is clicked by said

operating means; and

display in said 39th window:

a section for causing an operator of its own apparatus to select an arbitrary control apparatus in said network system; and

a section for causing an operator of its own apparatus to set an access level with respect to said network management equipment selected in said section, and

wherein said information processing means determines said node selected in said 38th window as a control target of said network management equipment selected in said 39th window, and registers it together with said selected access level.

58. A network management equipment provided in a network system including a plurality of node, said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a 33rd button on a screen of said display unit;

displays a 40th window on said screen of said display unit when said 33rd button is clicked by said operating means; and

displays in said 40th window:

a section for causing an operator of its own apparatus to select an arbitrary node in a network system;

a list of a current set state of an operation reference time of each node selected in said section; and

a section for causing a user to select an arbitrary apparatus from said list and causing a user to individually set an operation reference time with respect to said selected apparatus, and

wherein said information processing means sets said operation reference time set in said 40th window with respect to said selected node.

59. The network management equipment according to claim 58, wherein said display controlling means displays a 34th button on said screen of said display unit;

displays a 41st window on said screen of said display unit when said 34th button is clicked by said operating means; and

displays in said 41st window a section for causing

an operator of its own apparatus to select an arbitrary node in said network system,

wherein said information processing means reads version information of software installed in a node selected in said 41st window and a date of installation of said software from said selected node, and

wherein said display controlling means displays in said 41st window said version information of said software read by said information processing means and said date of installation of said software.

60. The network management equipment according to claim 58, wherein said display controlling means displays a 35th button on said screen of said display unit;

displays a 42nd window on said screen of said display unit when said 35th button is clicked by said operating means; and

displays in said 42nd window:

a section for causing an operator of its own apparatus to select an arbitrary ring network in said network system; and

current names of nodes belonging to said ring network together with a type drawing of said ring network selected in said section, and

wherein when a name is newly given to a node arbitrarily selected in said 42nd window, said information processing means sets said name to said

corresponding node.

61. A network management equipment provided to a network system including a plurality of nodes, said network management equipment comprising:

a display unit;

information acquiring means for acquiring notification information respectively transmitted from a plurality of said nodes;

information processing means for managing said network system based on said notification information acquired by said information acquiring means; and

display controlling means for displaying information processed by said information processing means on said display unit,

wherein said display controlling means displays a 36th button on a screen of said display unit;

displays a 43rd window on said screen of said display unit when said 36th button is clicked by said operating means; and

displays in said 43rd window:

a color specification button in accordance with each state that an object displayed on said screen of said display unit can enter;

a color pallet to cause an operator of its own apparatus to set a display color of a state corresponding to said color specification button when said color specification button is arbitrarily clicked;

an object displayed on said screen of said display unit in a display color set in said color pallet.

ABSTRACT OF THE DISCLOSURE

A graphics map of an area in which a system is set is displayed on a screen of a display unit, and minimized stations and line connecting between the stations are displayed on the map. Display colors of the station icon and the line icon are changed in accordance with presence/absence of a failure. When each station icon is clicked, a window showing a list of NODEs belonging to that station is opened, and a NODE having a failure and a NODE having no failure are also distinguished from each other by changing the display colors in this window.

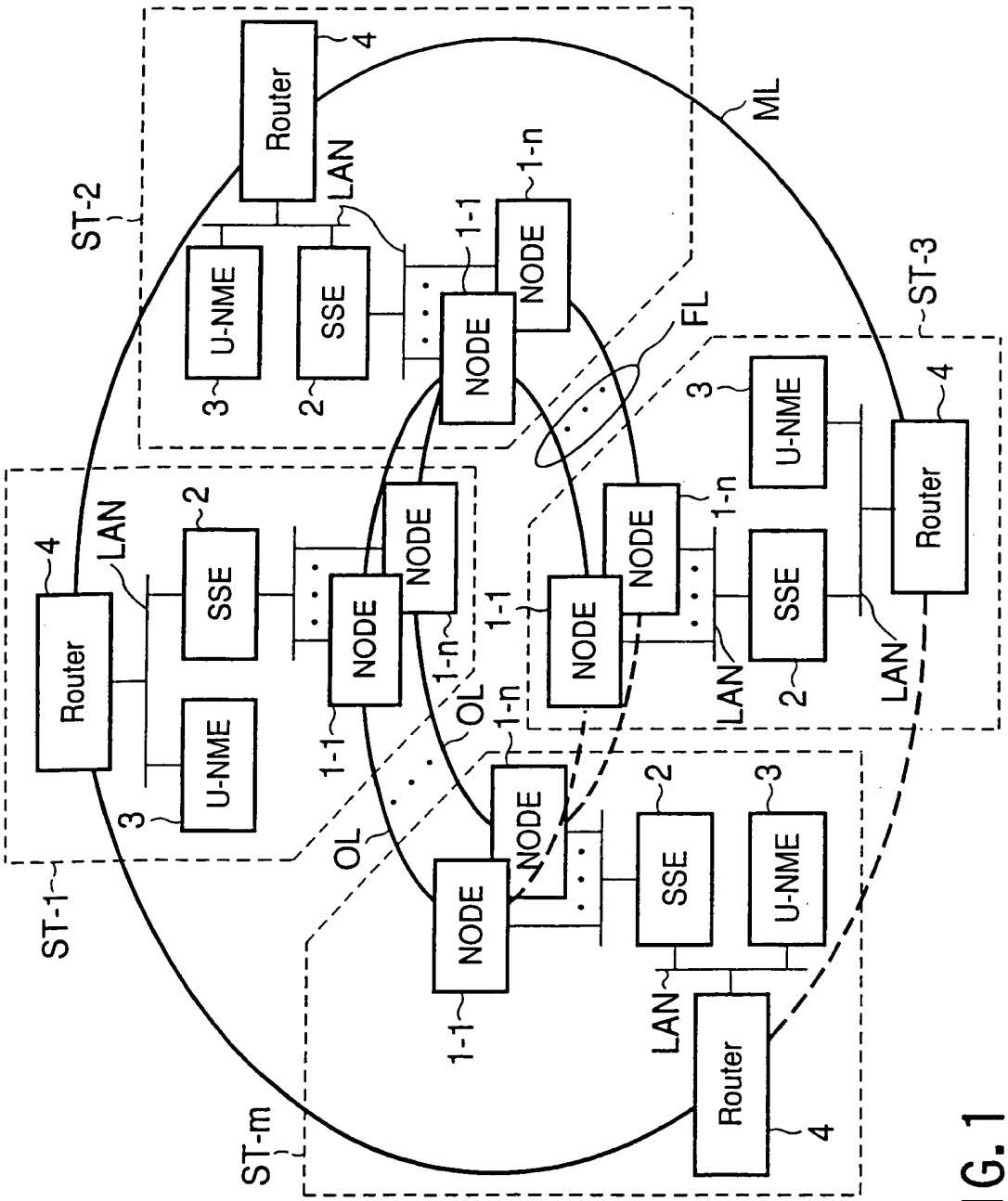
ST-1
ST-2
ST-3
ST-m
ML
FL
OL
OL
LAN
LAN
LAN
LAN
Router
Router
Router
Router
SSE
SSE
SSE
U-NME
U-NME
U-NME
NODE
NODE
NODE
NODE
NODE
NODE
1-1
1-n
1-1
1-n
1-1
1-n
2
3
4

FIG. 1

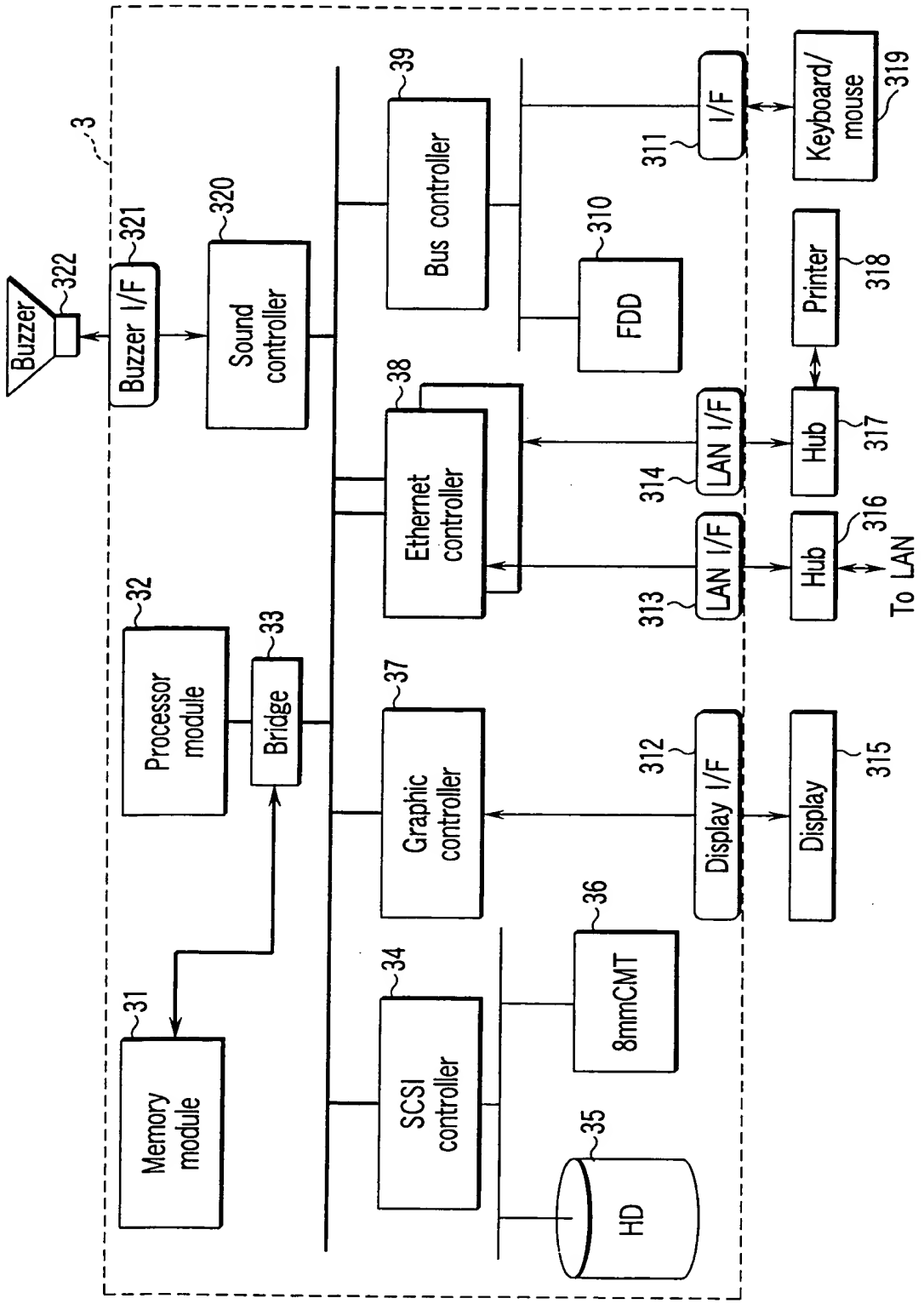
3
Buzzer
322
Buzzer I/F
321
Sound controller
320
Bus controller
39
I/F
311
Keyboard/ mouse
319
FDD
310
Printer
318
Ethernet controller
38
LAN I/F
314
Hub
317
LAN I/F
313
Hub
316
To LAN
Processor module
32
Bridge
33
Graphic controller
37
Display I/F
312
Display
315
Memory module
31
SCSI controller
34
8mmCMT
36
HD
35

FIG. 2

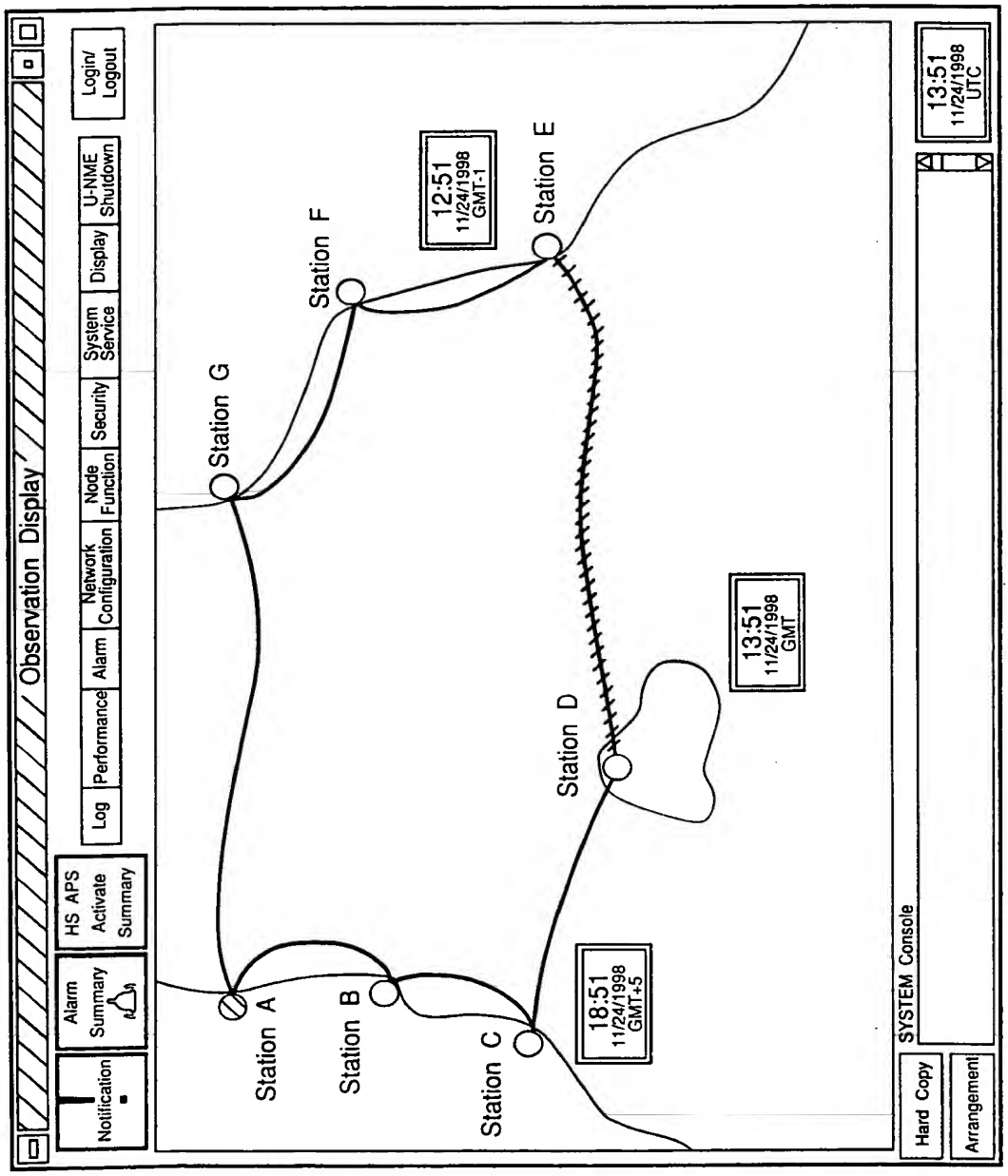
Observation Display
Notification
Alarm Summary
HS APS Activate Summary
Log
Performance
Alarm
Network Configuration
Node Function
Security
System Service
Display
U-NME Shutdown
Login/ Logout
Station A
Station B
Station C
Station D
Station E
Station F
Station G
18:51 11/24/1998 GMT+5
13:51 11/24/1998 GMT
12:51 11/24/1998 GMT-1
13:51 11/24/1998 UTC
SYSTEM Console
Hard Copy
Arrangement

FIG. 3

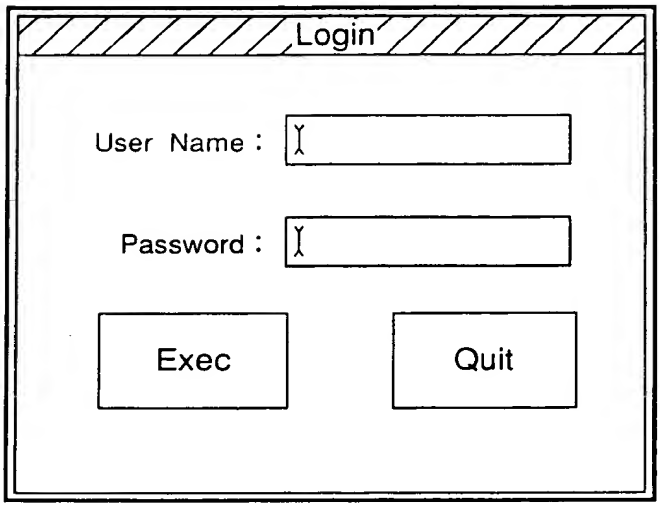
Login
User Name :
Password :
Exec
Quit

FIG. 4

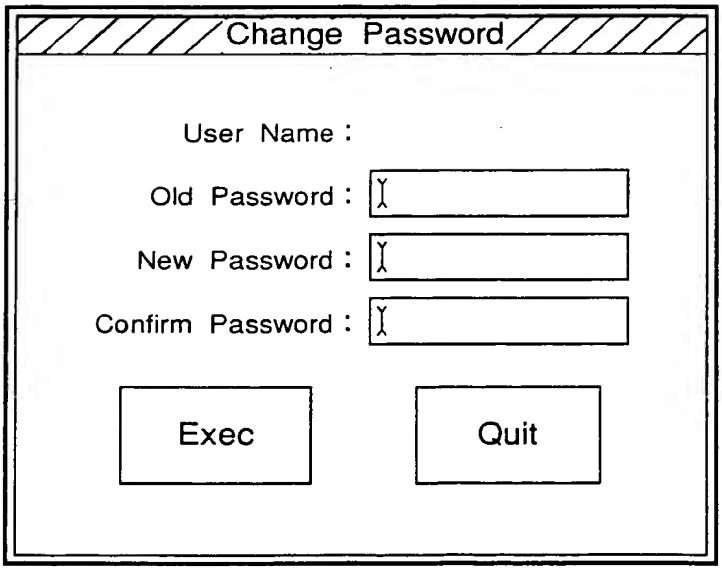
Change Password
User Name :
Old Password :
New Password :
Confirm Password :
Exec
Quit

FIG. 5

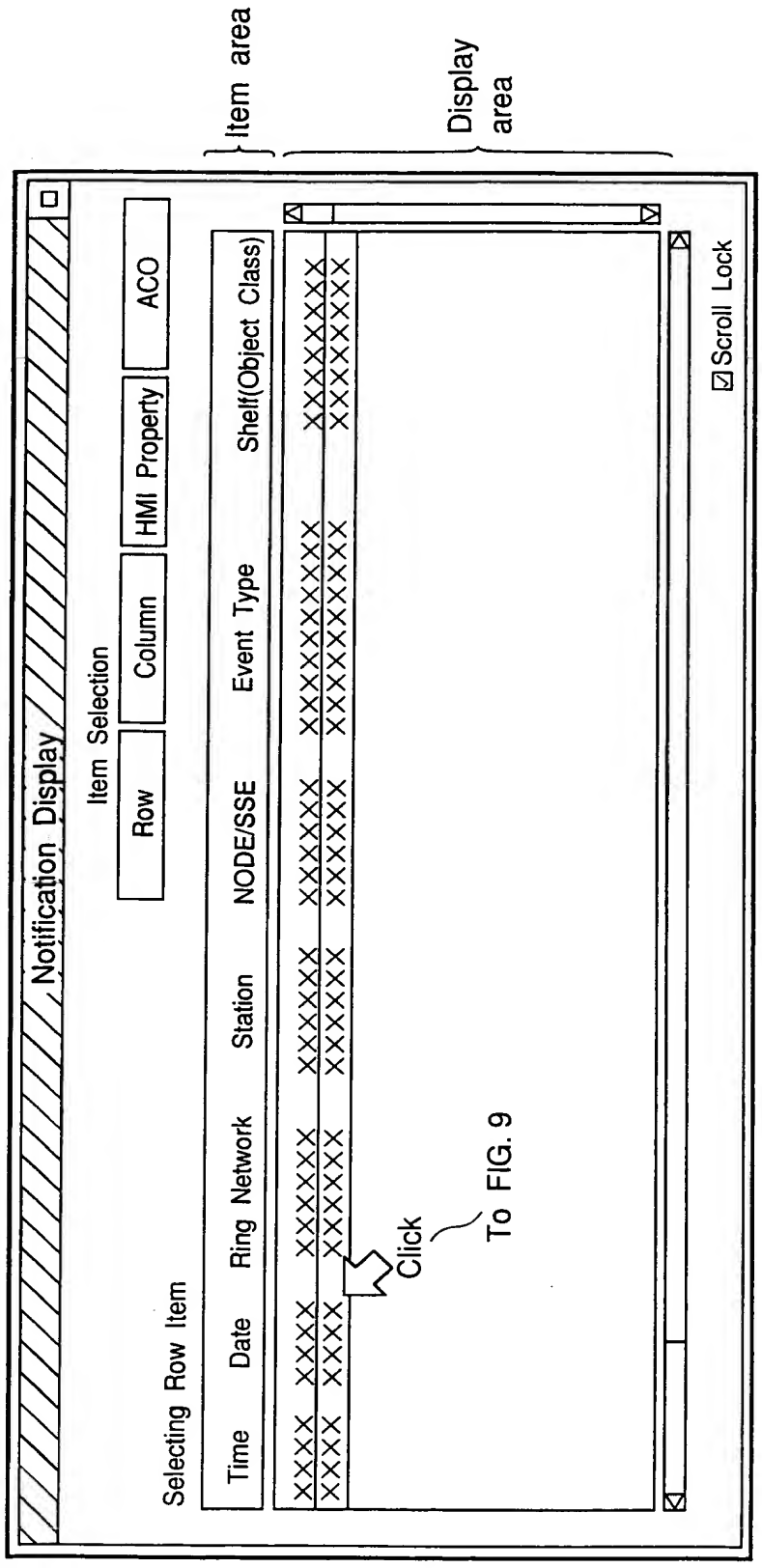
Item area
Display area
Notification Display
Item Selection
Row
Column
HMI Property
ACO
Time
Date
Ring Network
Station
NODE/SSE
Event Type
Shelf(Object Class)
Selecting Row Item
Click
To FIG. 9
Scroll Lock

FIG. 6

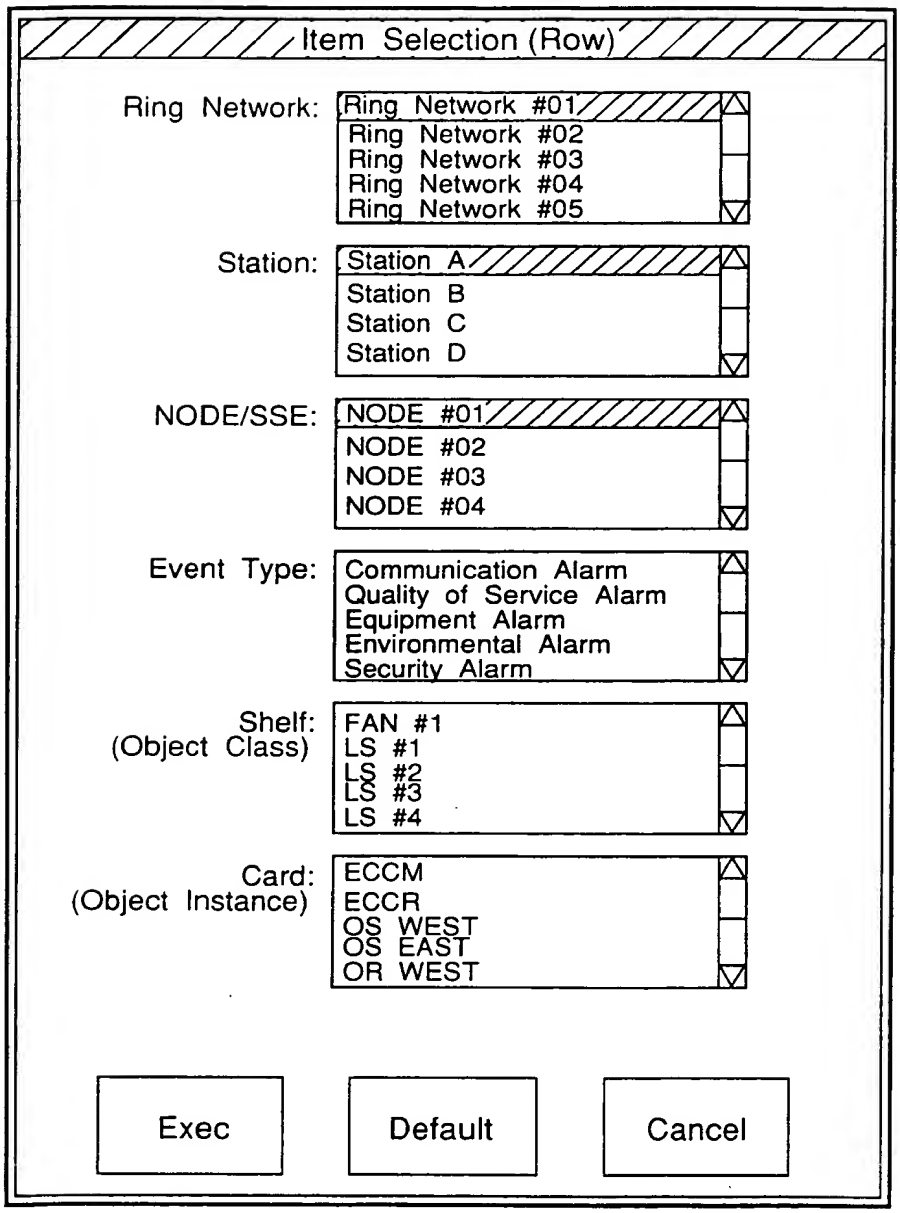
Item Selection (Row)
Ring Network:
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Station:
Station A
Station B
Station C
Station D
NODE/SSE:
NODE #01
NODE #02
NODE #03
NODE #04
Event Type:
Communication Alarm
Quality of Service Alarm
Equipment Alarm
Environmental Alarm
Security Alarm
Shelf:
(Object Class)
FAN #1
LS #1
LS #2
LS #3
LS #4
Card:
(Object Instance)
ECCM
ECCR
OS WEST
OS EAST
OR WEST
Exec
Default
Cancel

FIG. 7

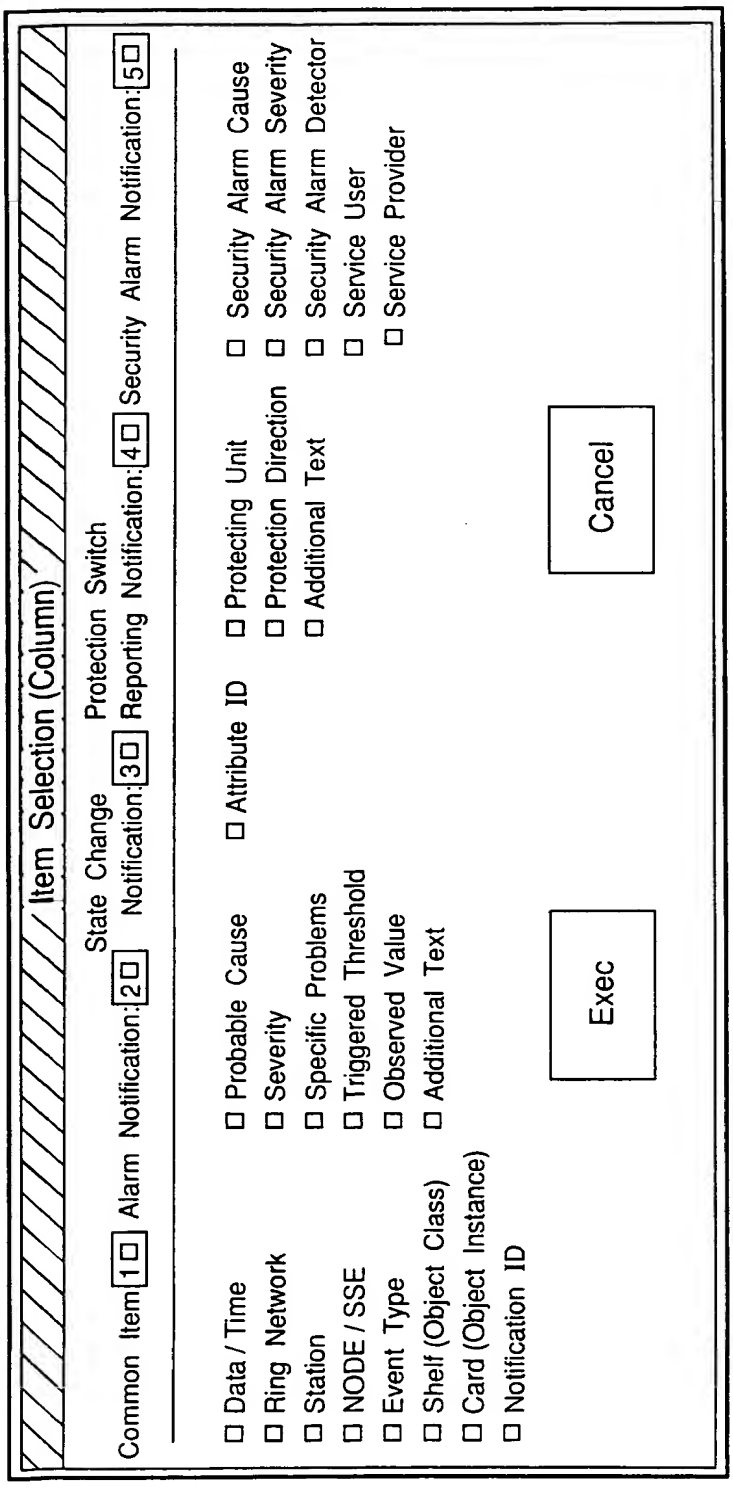
Item Selection (Column)
State Change
Protection Switch
Common Item 1 Alarm Notification: 2 Reporting Notification: 3 Reporting Notification: 4 Security Alarm Notification: 5
Data / Time
Ring Network
Station
NODE / SSE
Event Type
Shelf (Object Class)
Card (Object Instance)
Notification ID
Probable Cause
Severity
Specific Problems
Triggered Threshold
Observed Value
Additional Text
Attribute ID
Protecting Unit
Protection Direction
Additional Text
Security Alarm Cause
Security Alarm Severity
Security Alarm Detector
Service User
Service Provider
Exec
Cancel

FIG. 8

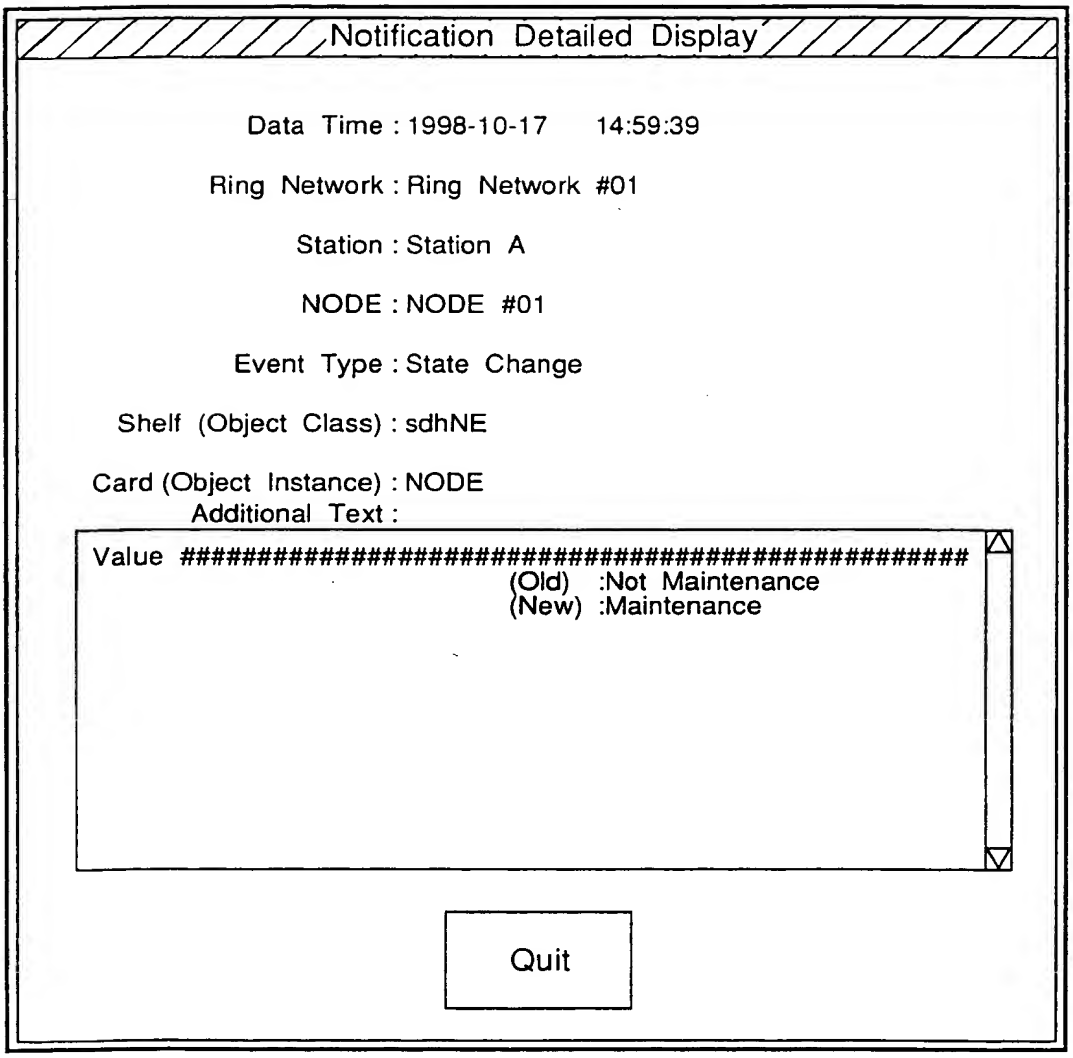
Notification Detailed Display
Data Time : 1998-10-17 14:59:39
Ring Network : Ring Network #01
Station : Station A
NODE : NODE #01
Event Type : State Change
Shelf (Object Class) : sdhNE
Card (Object Instance) : NODE
Additional Text :
Value ##########
(Old) :Not Maintenance
(New) :Maintenance
Quit

FIG. 9

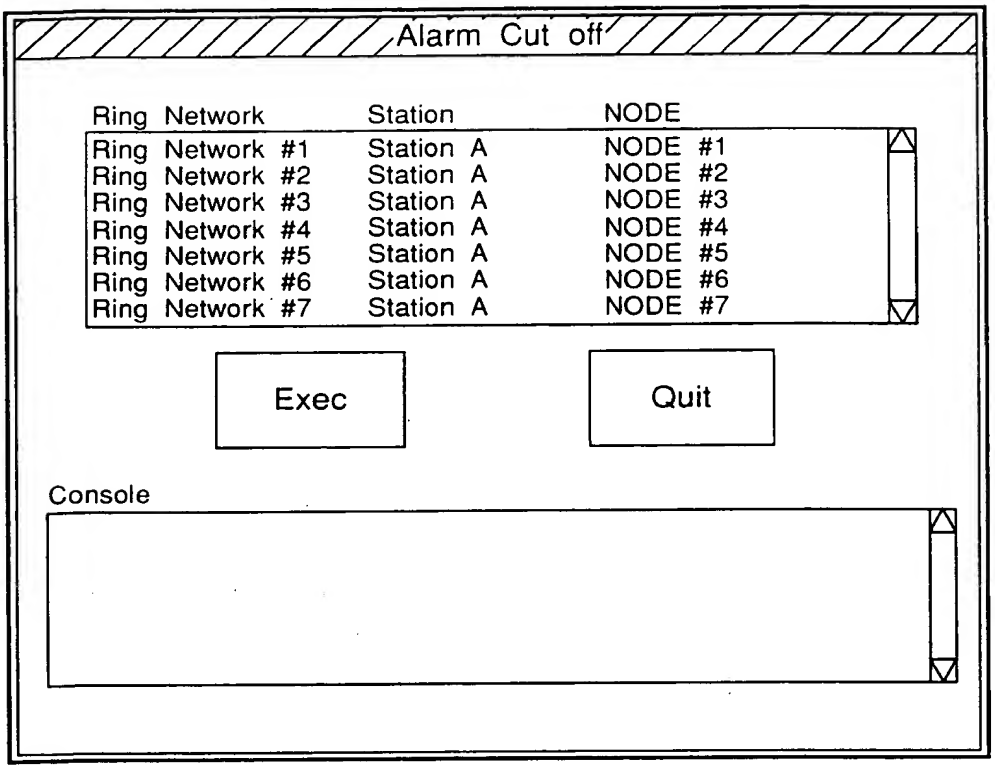
Alarm Cut off
Ring Network
Station
NODE
Ring Network #1 Station A NODE #1
Ring Network #2 Station A NODE #2
Ring Network #3 Station A NODE #3
Ring Network #4 Station A NODE #4
Ring Network #5 Station A NODE #5
Ring Network #6 Station A NODE #6
Ring Network #7 Station A NODE #7
Exec
Quit
Console

FIG. 10

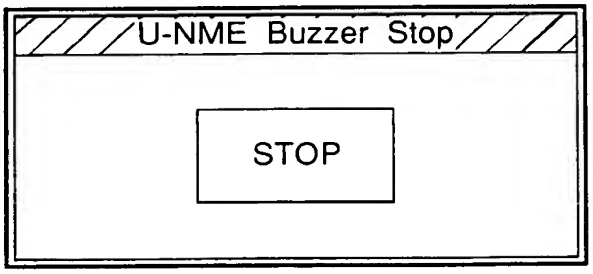
U-NME Buzzer Stop
STOP

FIG. 11

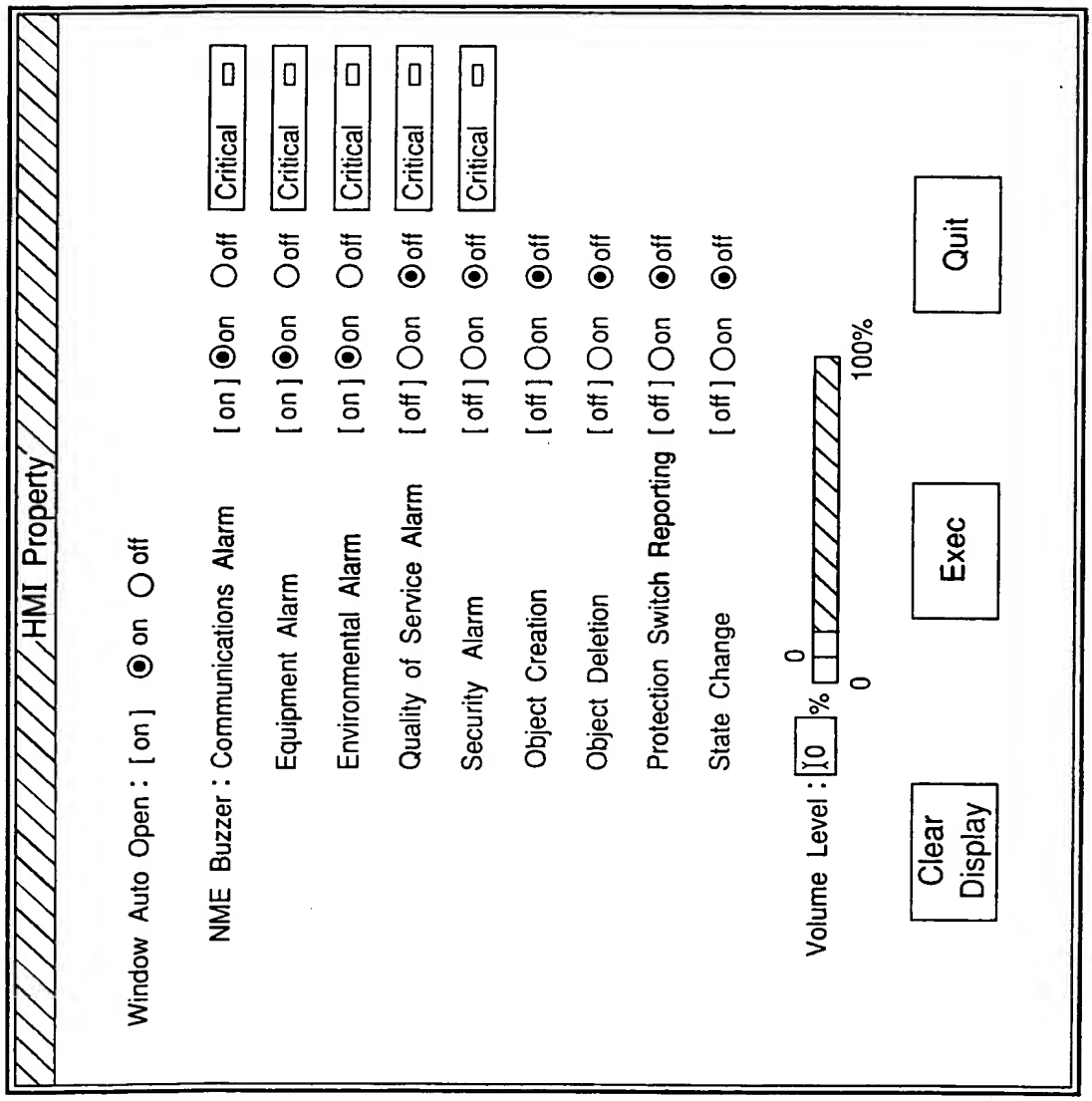
HMI Property
Window Auto Open : [on] on off
NME Buzzer : Communications Alarm [on] on off Critical
Equipment Alarm [on] on off Critical
Environmental Alarm [on] on off Critical
Quality of Service Alarm [off] on off Critical
Security Alarm [off] on off Critical
Object Creation [off] on off
Object Deletion [off] on off
Protection Switch Reporting [off] on off
State Change [off] on off
Volume Level : 0 % 0
0 100%
Clear Display
Exec
Quit

FIG. 12

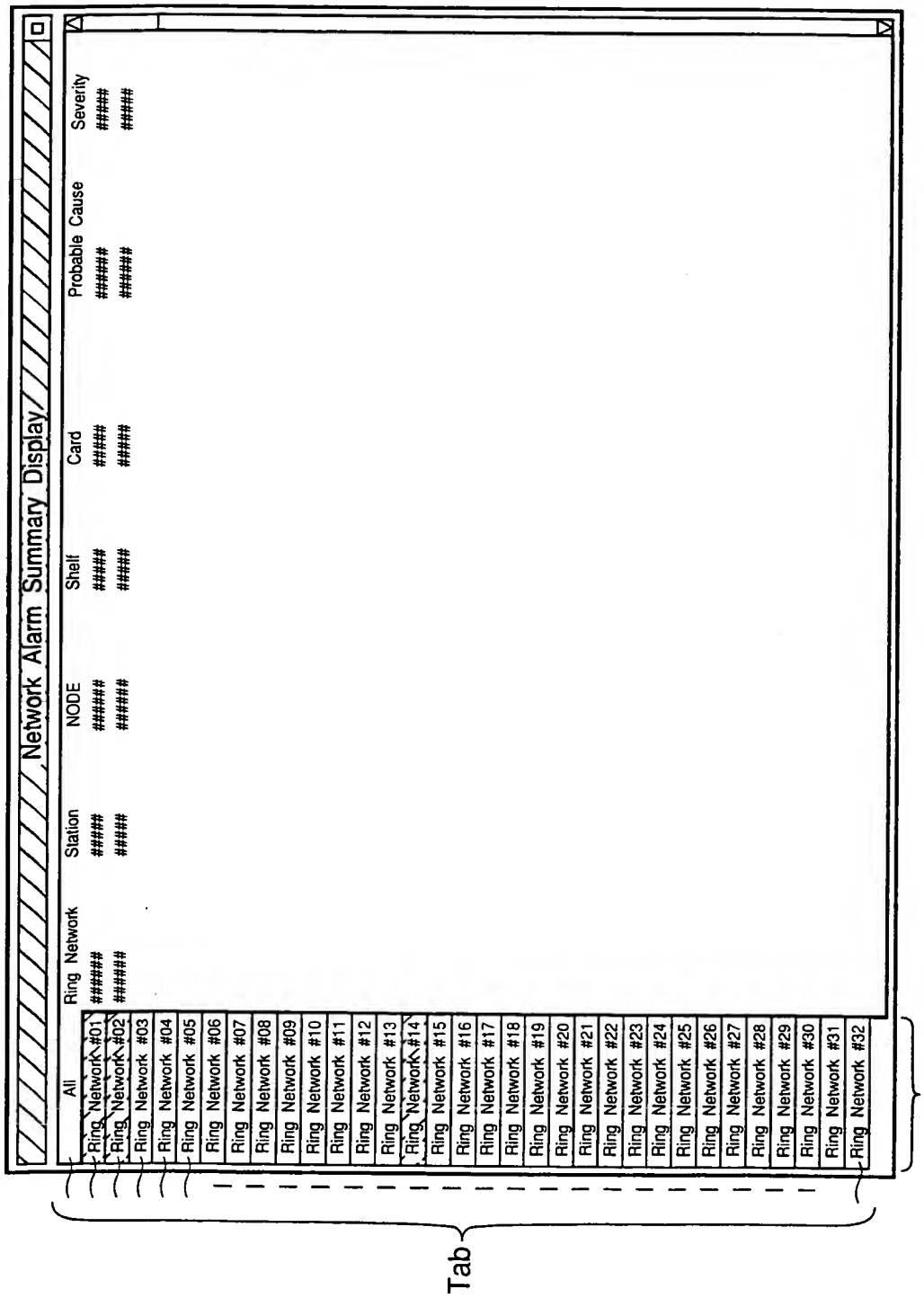
Network Alarm Summary Display
All
Ring Network
Station
NODE
Shelf
Card
Probable Cause
Severity
#####
#####
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Ring Network #06
Ring Network #07
Ring Network #08
Ring Network #09
Ring Network #10
Ring Network #11
Ring Network #12
Ring Network #13
Ring Network #14
Ring Network #15
Ring Network #16
Ring Network #17
Ring Network #18
Ring Network #19
Ring Network #20
Ring Network #21
Ring Network #22
Ring Network #23
Ring Network #24
Ring Network #25
Ring Network #26
Ring Network #27
Ring Network #28
Ring Network #29
Ring Network #30
Ring Network #31
Ring Network #32
Tab
Display Tab

FIG. 13

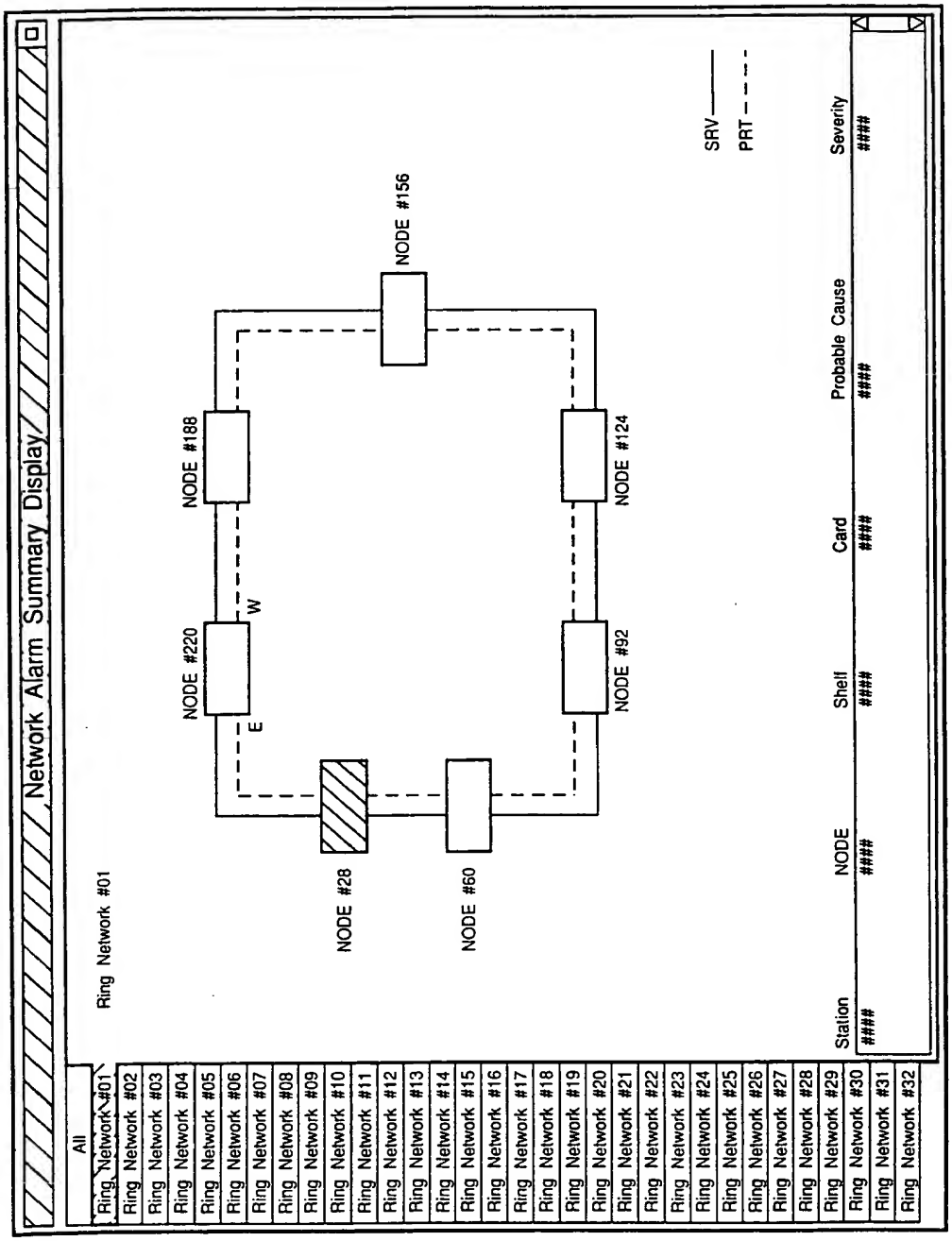
Network Alarm Summary Display
All
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Ring Network #06
Ring Network #07
Ring Network #08
Ring Network #09
Ring Network #10
Ring Network #11
Ring Network #12
Ring Network #13
Ring Network #14
Ring Network #15
Ring Network #16
Ring Network #17
Ring Network #18
Ring Network #19
Ring Network #20
Ring Network #21
Ring Network #22
Ring Network #23
Ring Network #24
Ring Network #25
Ring Network #26
Ring Network #27
Ring Network #28
Ring Network #29
Ring Network #30
Ring Network #31
Ring Network #32
Ring Network #01
NODE #156
NODE #188
NODE #124
NODE #220
NODE #92
NODE #28
NODE #60
W
E
SRV
PRT
Station
NODE
Shelf
Card
Probable Cause
Severity
####
####

FIG. 14

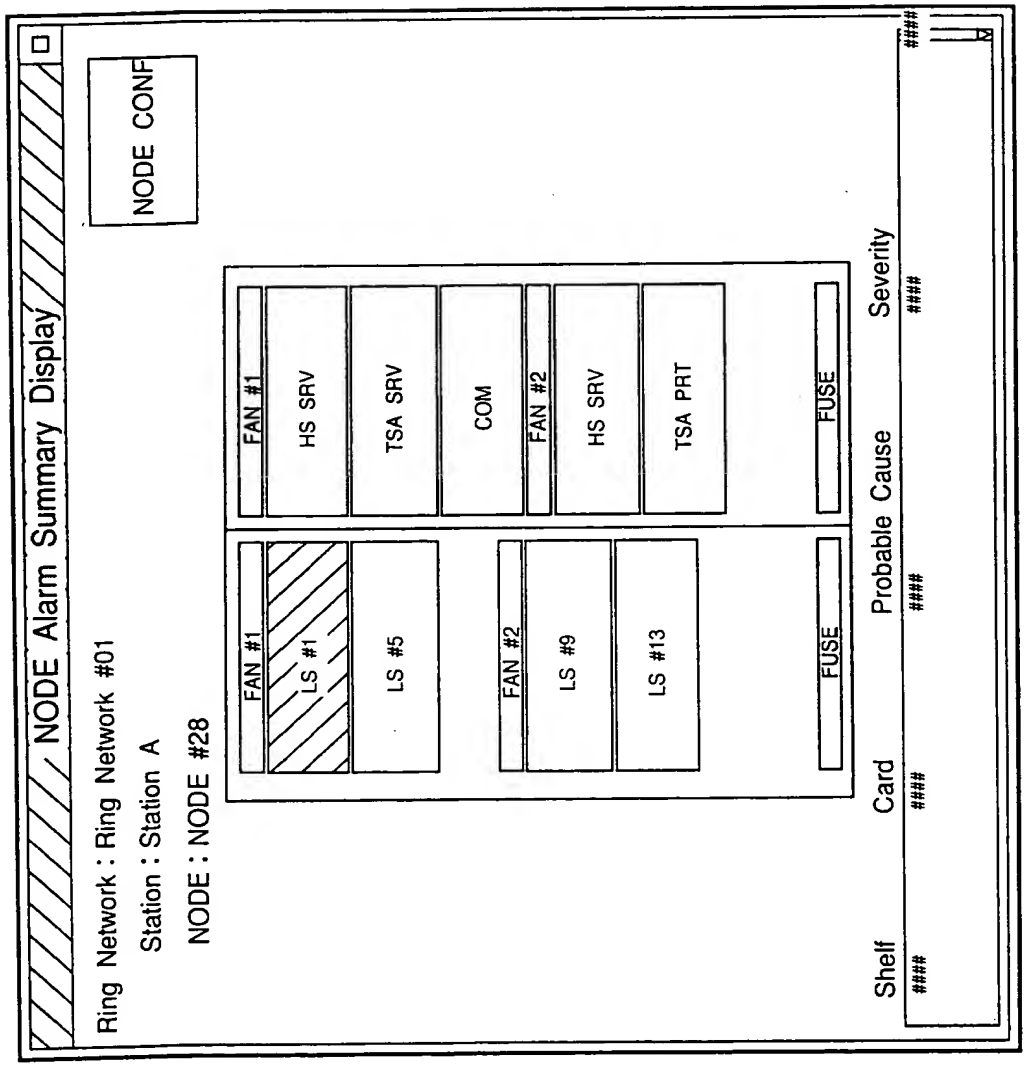
NODE Alarm Summary Display
NODE CONF
Ring Network : Ring Network #01
Station : Station A
NODE : NODE #28
FAN #1
LS #1
LS #5
FAN #2
LS #9
LS #13
FUSE
FAN #1
HS SRV
TSA SRV
COM
FAN #2
HS SRV
TSA PRT
FUSE
Shelf
Card
Probable Cause
Severity
####
####
####

FIG. 15

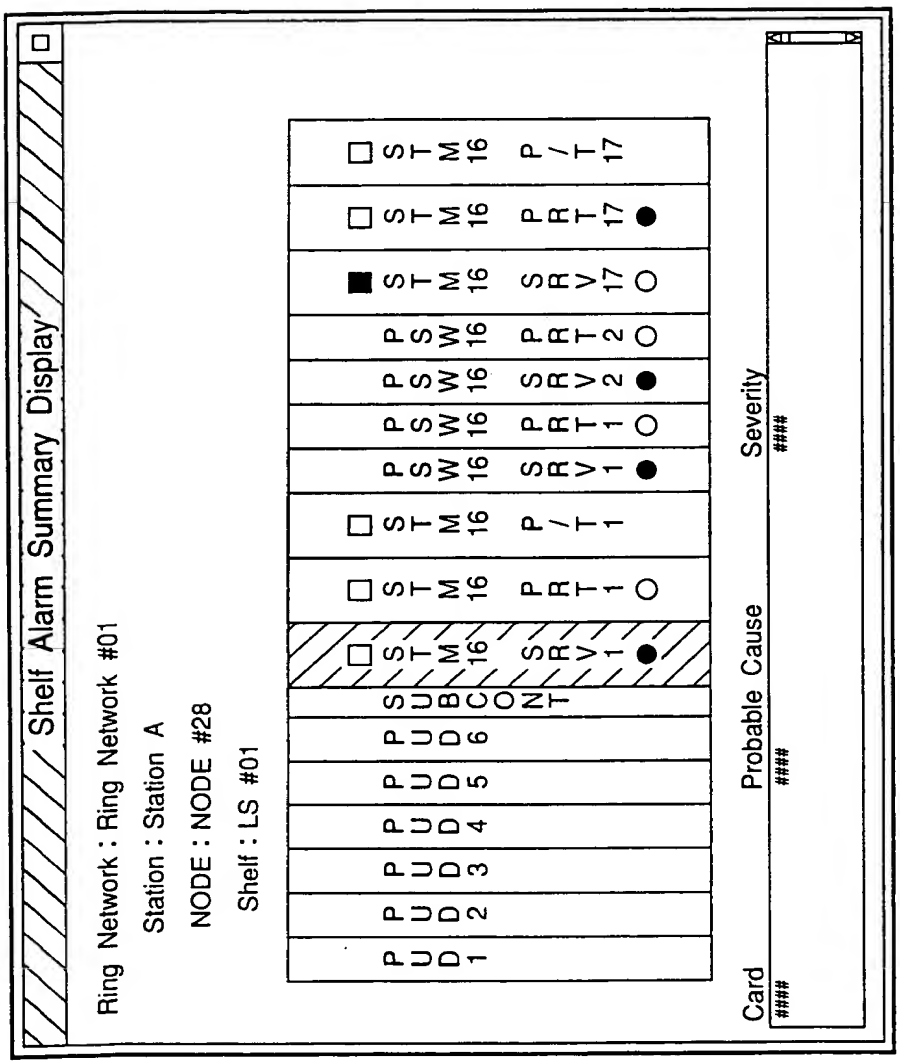
Shelf Alarm Summary Display
Ring Network : Ring Network #01
Station : Station A
NODE : NODE #28
Shelf : LS #01
PUDD1
PUDD2
PUDD3
PUDD4
PUDD5
PUDD6
SUBC
STM16
PSR/TV1
PSRTV1
PSRTV2
PSRTV17
PSR/T17
Card
Probable Cause
Severity
####

FIG. 16

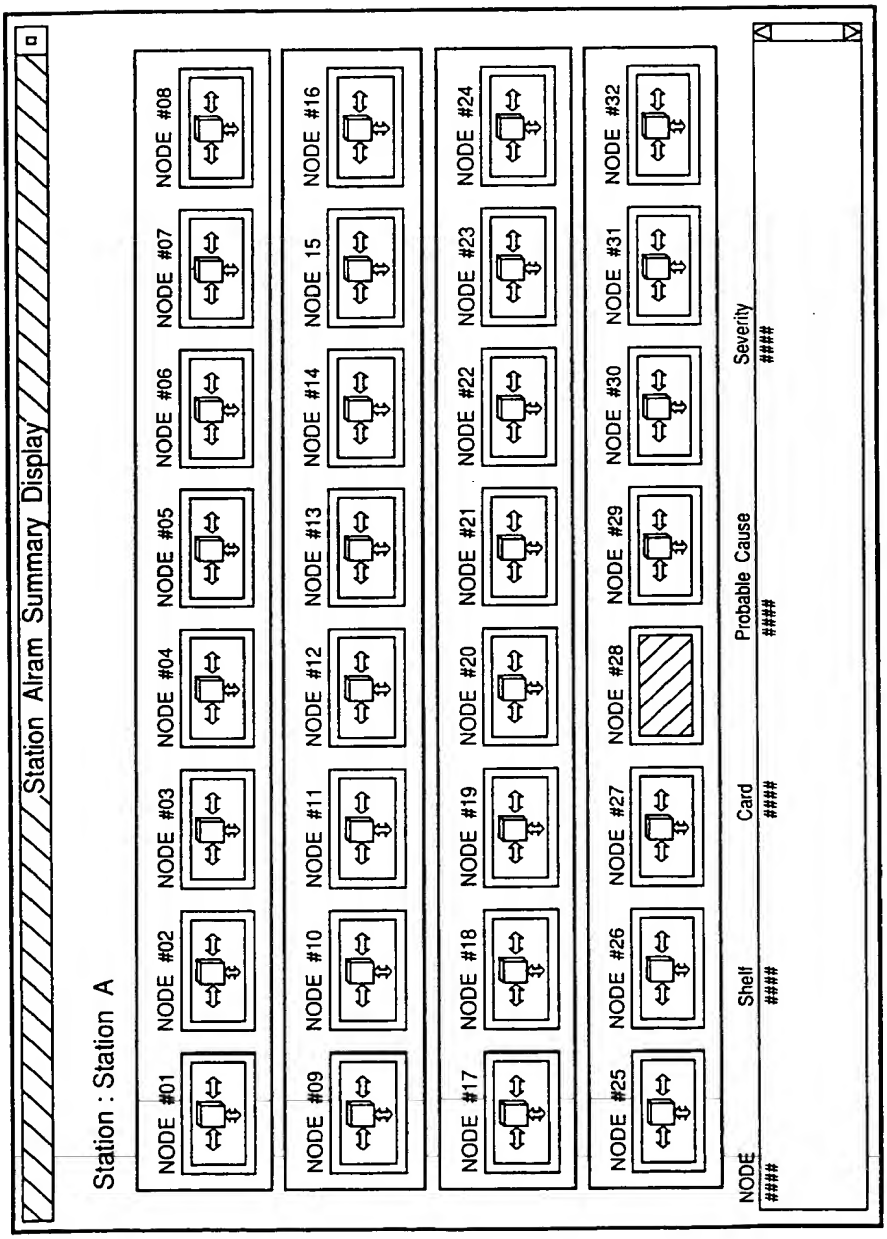
Station Alram Summary Display
Station : Station A
NODE #01
NODE #02
NODE #03
NODE #04
NODE #05
NODE #06
NODE #07
NODE #08
NODE #09
NODE #10
NODE #11
NODE #12
NODE #13
NODE #14
NODE 15
NODE #16
NODE #17
NODE #18
NODE #19
NODE #20
NODE #21
NODE #22
NODE #23
NODE #24
NODE #25
NODE #26
NODE #27
NODE #28
NODE #29
NODE #30
NODE #31
NODE #32
NODE
Shelf
Card
Probable Cause
Severity
####
####
####
####
####
####

FIG. 17

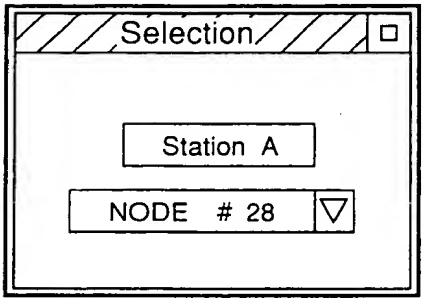
Selection
Station A
NODE # 28

FIG. 18

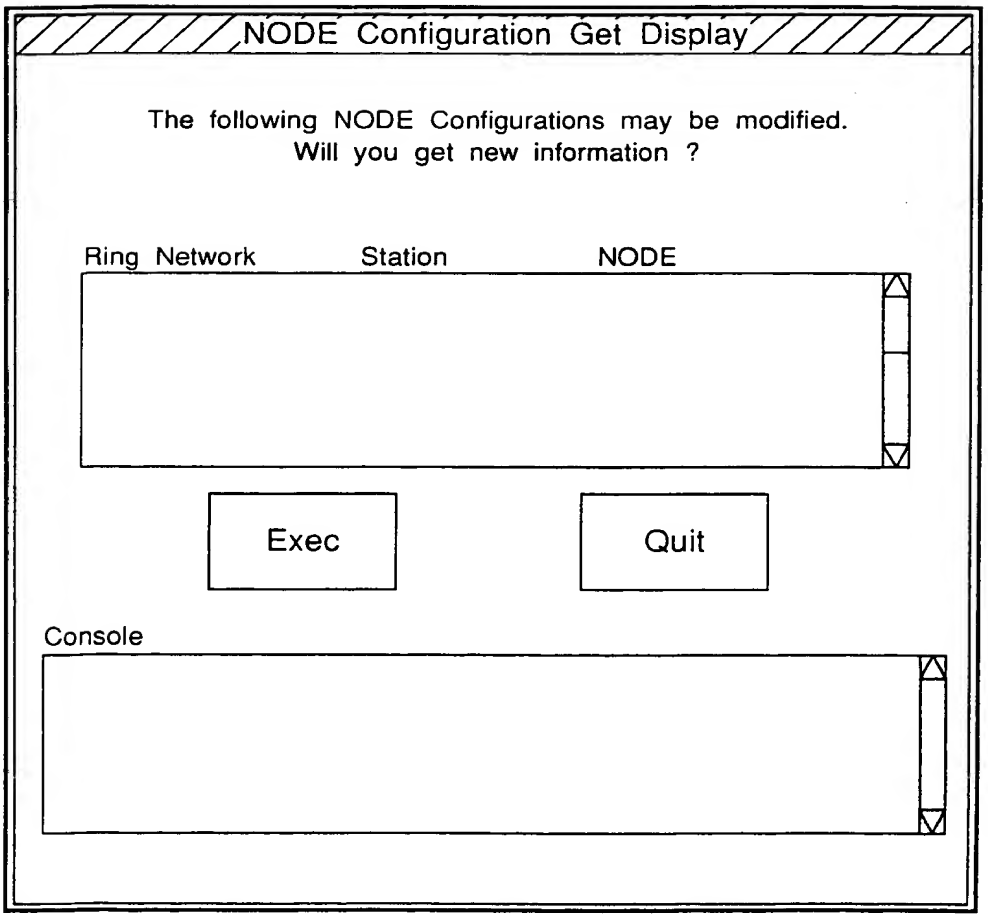
NODE Configuration Get Display
The following NODE Configurations may be modified.
Will you get new information ?
Ring Network
Station
NODE
Exec
Quit
Console

FIG. 19

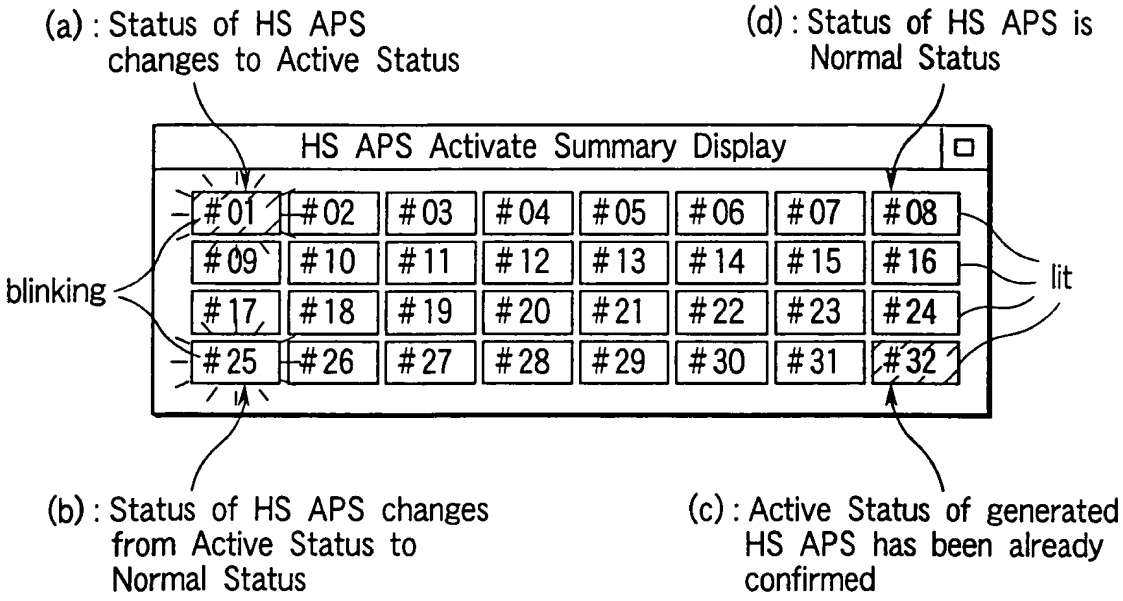
(a) : Status of HS APS changes to Active Status
(d) : Status of HS APS is Normal Status
HS APS Activate Summary Display
#01 #02 #03 #04 #05 #06 #07 #08
#09 #10 #11 #12 #13 #14 #15 #16
#17 #18 #19 #20 #21 #22 #23 #24
#25 #26 #27 #28 #29 #30 #31 #32
blinking
lit
(b) : Status of HS APS changes from Active Status to Normal Status
(c) : Active Status of generated HS APS has been already confirmed

FIG. 20

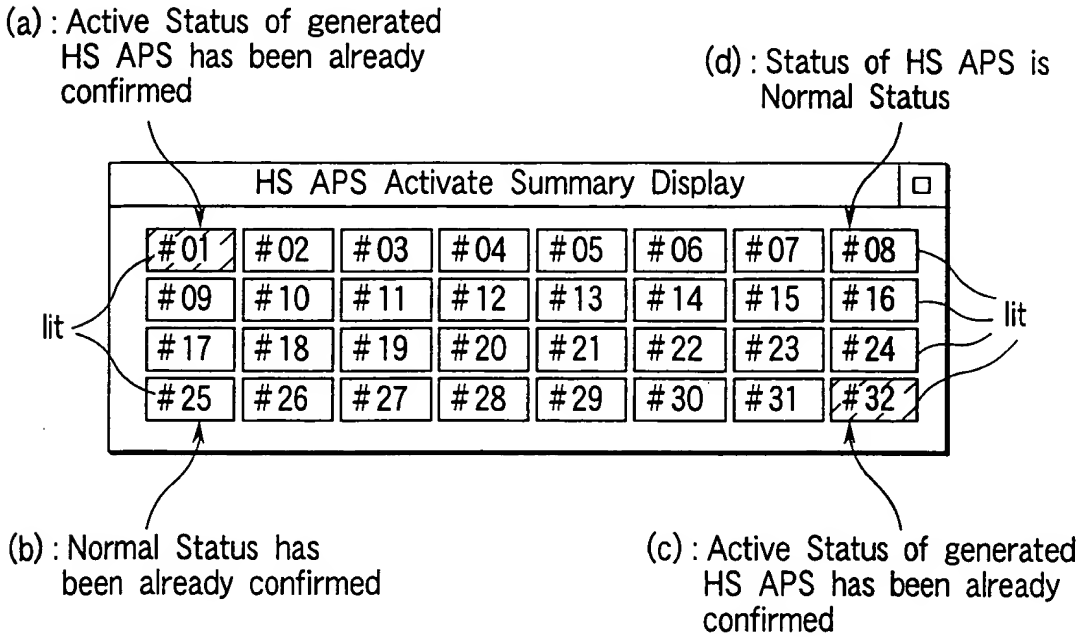
(a) : Active Status of generated HS APS has been already confirmed
(d) : Status of HS APS is Normal Status
HS APS Activate Summary Display
#01 #02 #03 #04 #05 #06 #07 #08
#09 #10 #11 #12 #13 #14 #15 #16
#17 #18 #19 #20 #21 #22 #23 #24
#25 #26 #27 #28 #29 #30 #31 #32
lit
lit
(b) : Normal Status has been already confirmed
(c) : Active Status of generated HS APS has been already confirmed

FIG. 21

Transmitter number	HS APS activation status (ex.) Normal Status : 0 Active Status : 1	
#01	0	Corresponding to network #01
#02	1	
#03	0	
#04	1	
#05	1	
#06	0	
#07	1	
⋮	⋮	
#218	1	Corresponding to network #32
#219	0	
#220	0	
#221	0	
#222		
#223	0	
#224	0	

FIG. 22

Network number	HS APS activation status (ex.) Normal Status : 0 Active Status : 1	Confirmation status (ex.) Unconfirmed : 0 (default) Confirmed : 1
#01	1	1
⋮	⋮	⋮
#08	0	0
⋮	⋮	⋮
#25	0	1
⋮	⋮	⋮
#32	1	0

FIG. 23

Button display		Meaning of display	
Red	Blinking	HS APS Active Status	Unconfirmed
	Lighting		Confirmed
Green	Blinking	HS APS Nomal Status	Unconfirmed
	Lighting		Confirmed

FIG. 24

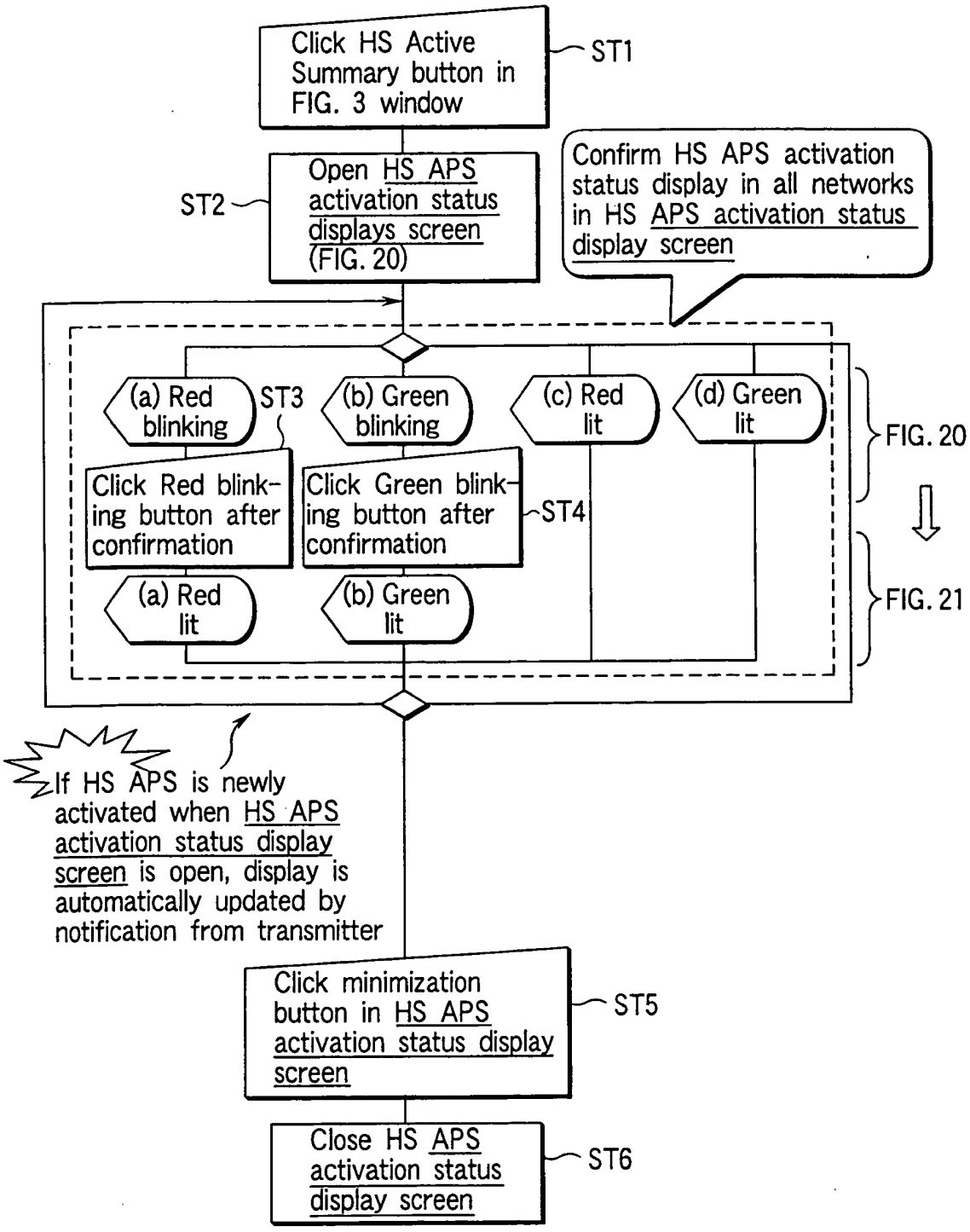
Click HS Active Summary button in FIG. 3 window
ST1
Open HS APS activation status displays screen (FIG. 20)
ST2
Confirm HS APS activation status display in all networks in HS APS activation status display screen
(a) Red blinking
ST3
(b) Green blinking
(c) Red lit
(d) Green lit
FIG. 20
Click Red blinking button after confirmation
Click Green blinking button after confirmation
ST4
(a) Red lit
(b) Green lit
FIG. 21
If HS APS is newly activated when HS APS activation status display screen is open, display is automatically updated by notification from transmitter
Click minimization button in HS APS activation status display screen
ST5
Close HS APS activation status display screen
ST6

FIG. 25

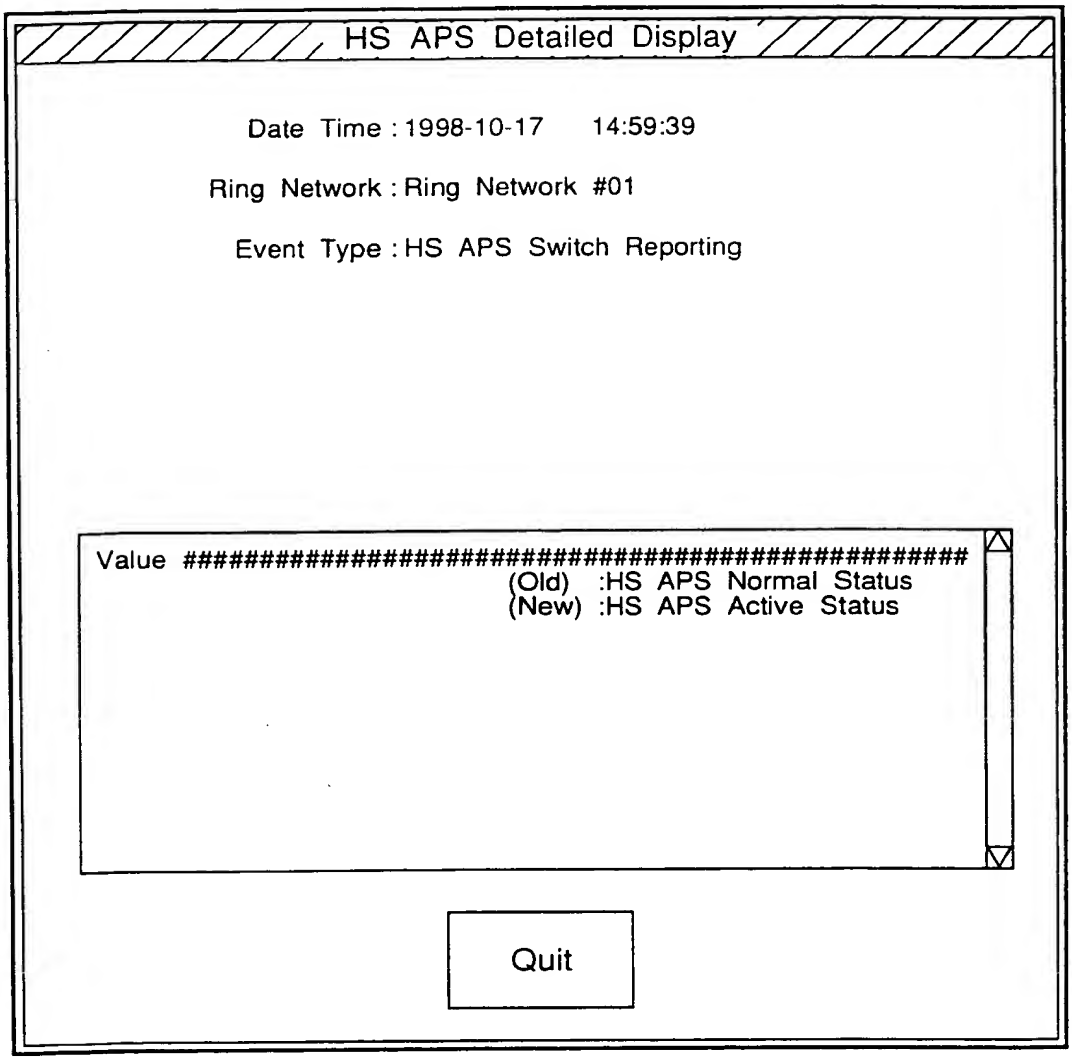
HS APS Detailed Display
Date Time : 1998-10-17 14:59:39
Ring Network : Ring Network #01
Event Type : HS APS Switch Reporting
Value ##########
(Old) :HS APS Normal Status
(New) :HS APS Active Status
Quit

FIG. 26

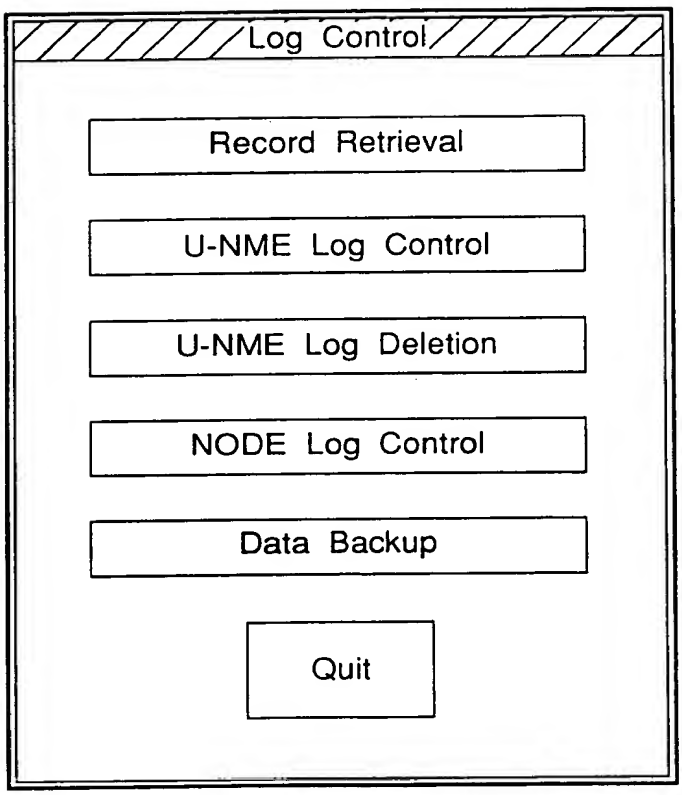
Log Control
Record Retrieval
U-NME Log Control
U-NME Log Deletion
NODE Log Control
Data Backup
Quit

FIG. 27

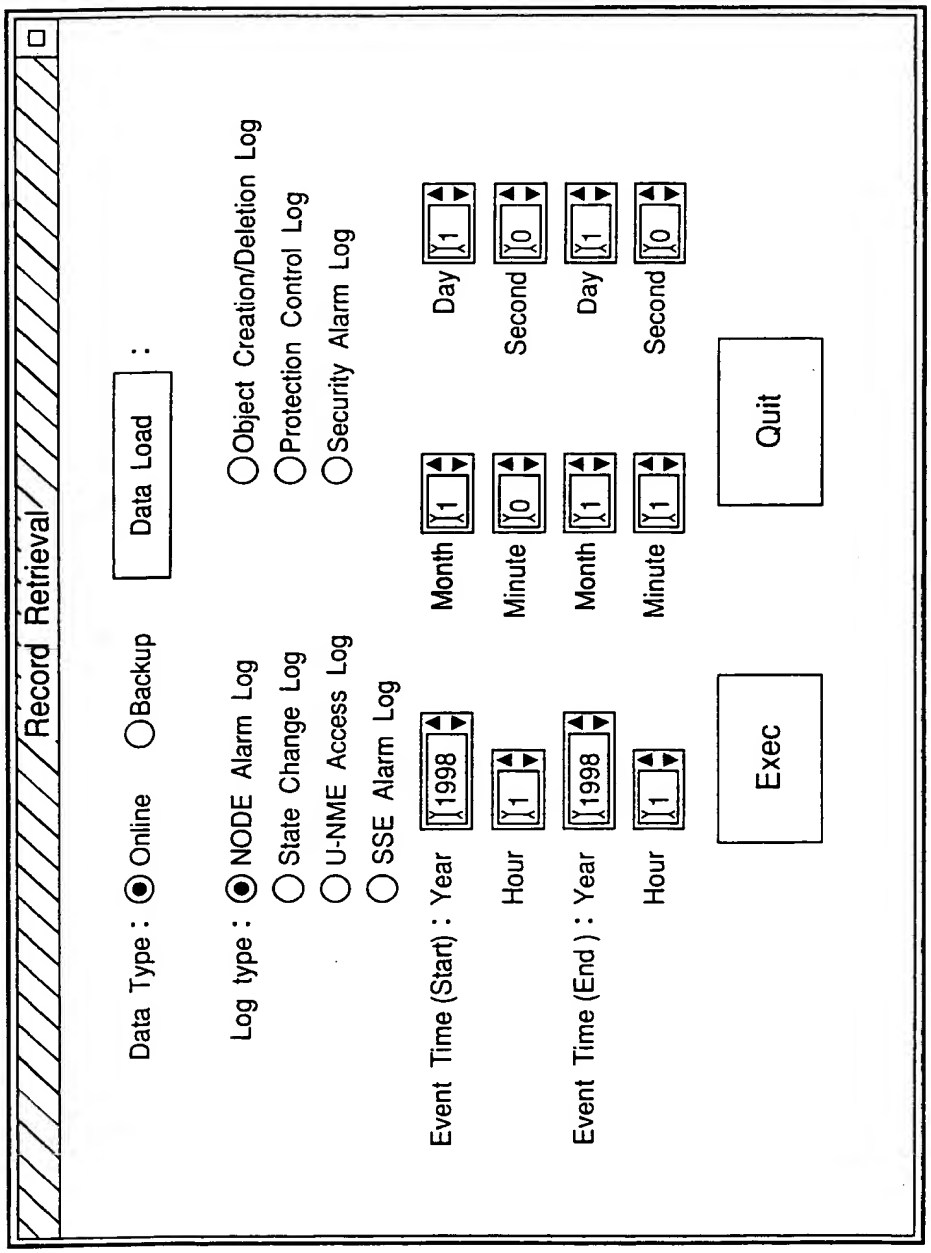
Record Retrieval
Data Type : Online
Backup
Data Load
Log type : NODE Alarm Log
State Change Log
U-NME Access Log
SSE Alarm Log
Object Creation/Deletion Log
Protection Control Log
Security Alarm Log
Event Time (Start) : Year 1998
Month 1
Day 1
Hour 1
Minute 0
Second 0
Event Time (End) : Year 1998
Month 1
Day 1
Hour 1
Minute 1
Second 0
Exec
Quit

FIG. 28

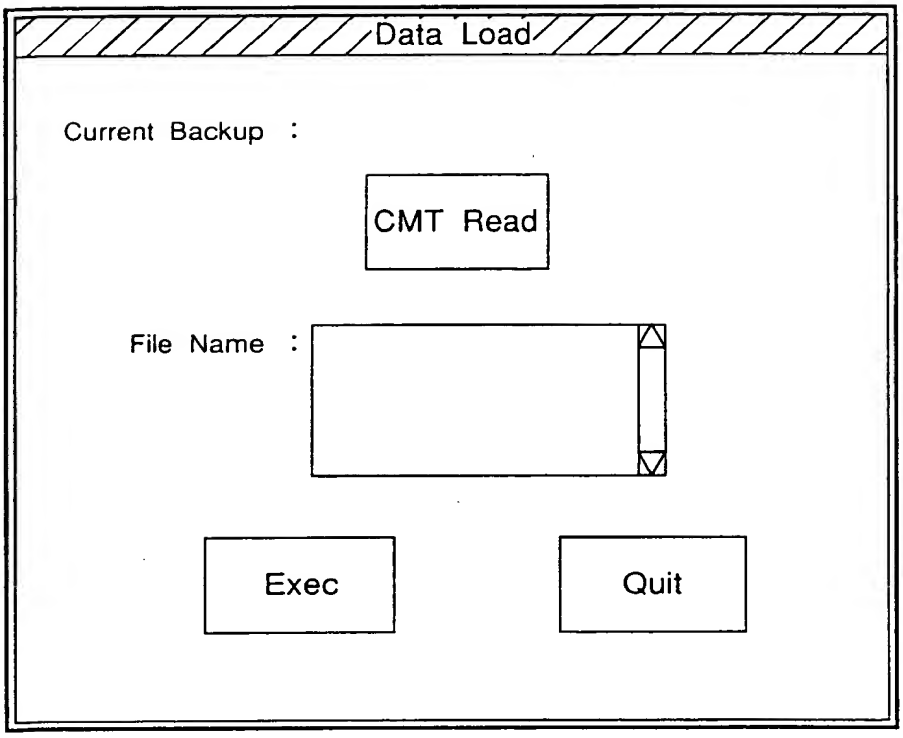

FIG. 29

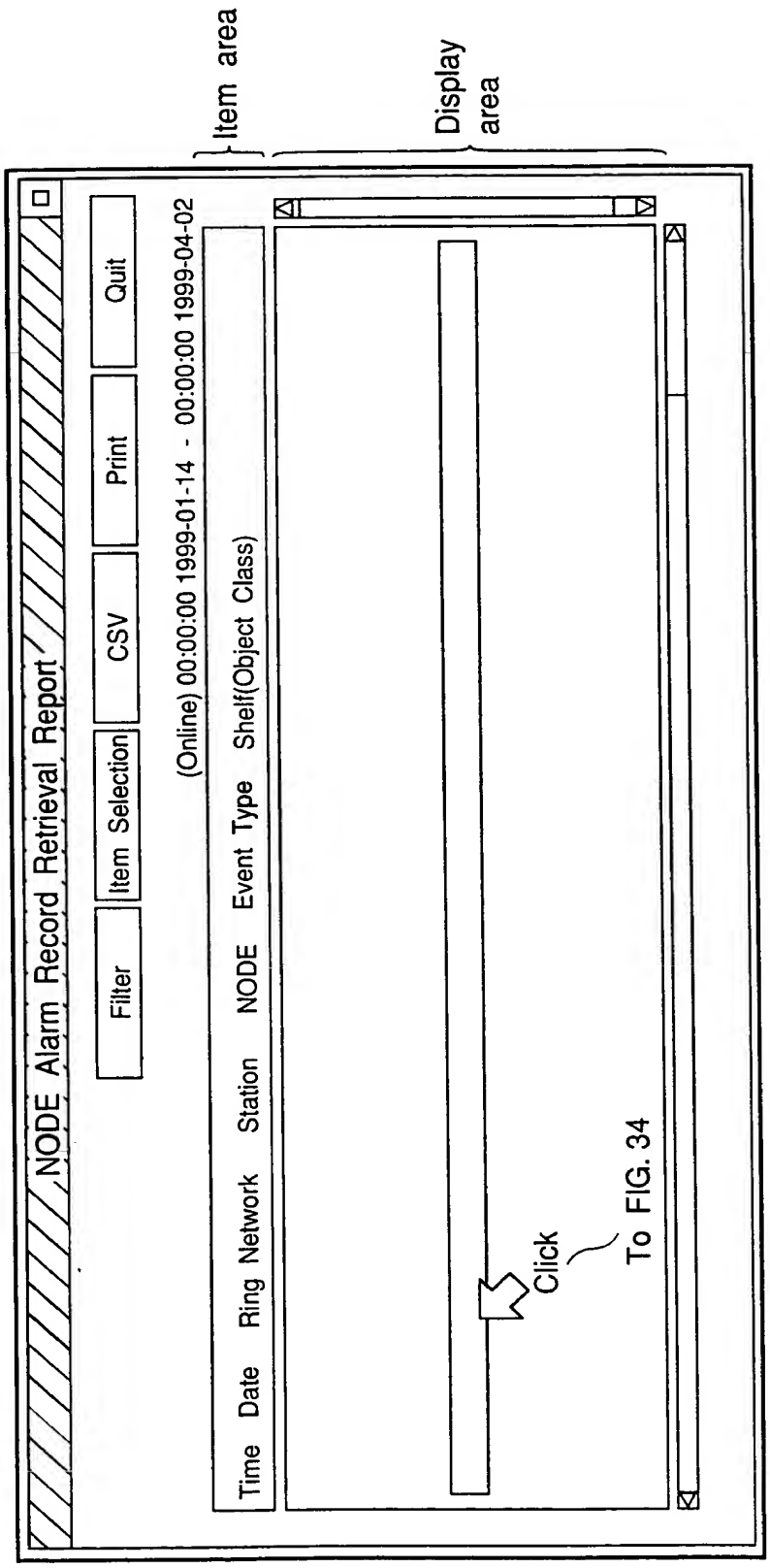
Item area
Display area
NODE Alarm Record Retrieval Report
Filter
Item Selection
CSV
Print
Quit
(Online) 00:00:00 1999-01-14 - 00:00:00 1999-04-02
Time Date Ring Network Station NODE Event Type Shelf(Object Class)
Click
To FIG. 34

FIG. 30

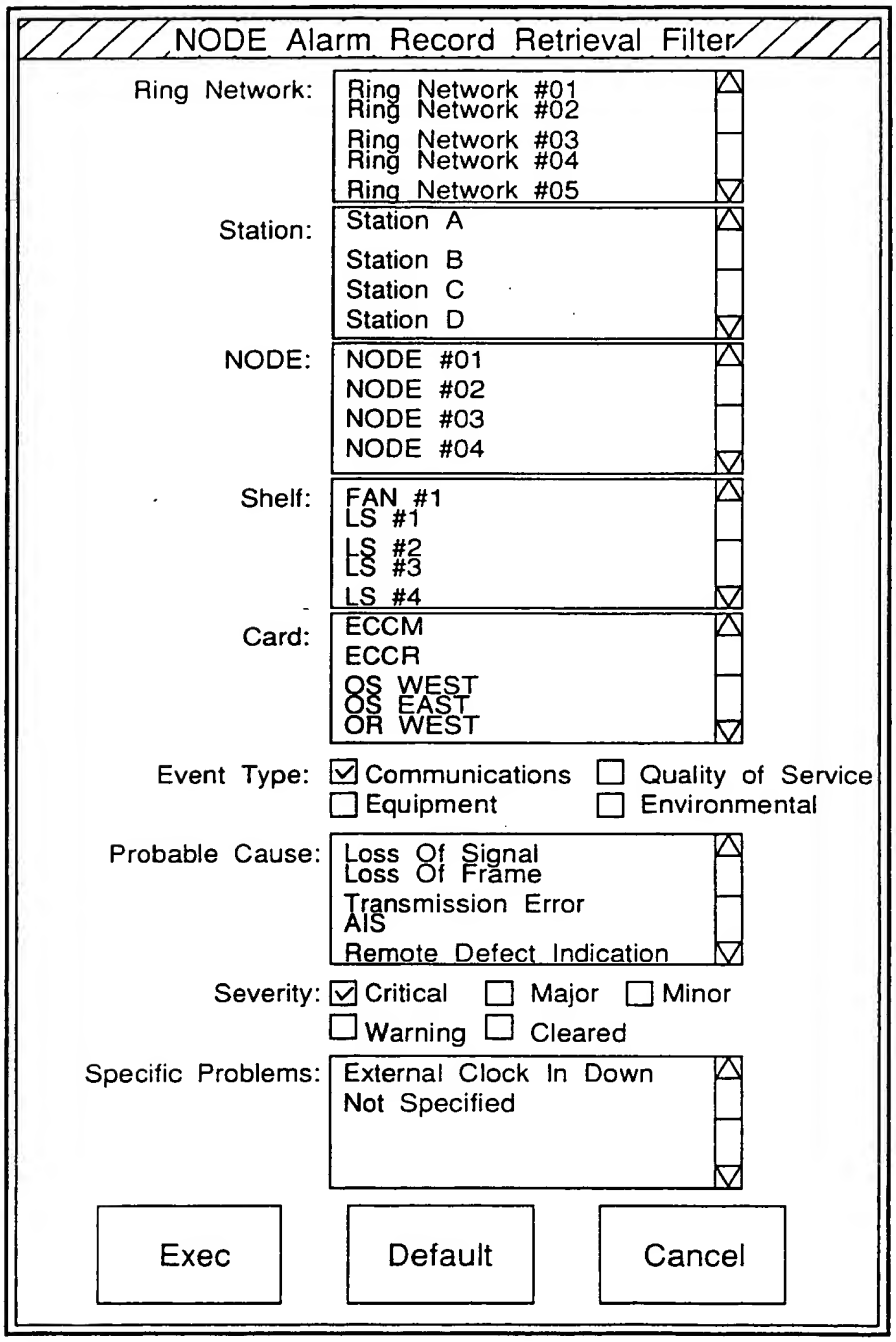
NODE Alarm Record Retrieval Filter
Ring Network:
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Station:
Station A
Station B
Station C
Station D
NODE:
NODE #01
NODE #02
NODE #03
NODE #04
Shelf:
FAN #1
LS #1
LS #2
LS #3
LS #4
Card:
ECCM
ECCR
OS WEST
OS EAST
OR WEST
Event Type:
Communications
Quality of Service
Equipment
Environmental
Probable Cause:
Loss Of Signal
Loss Of Frame
Transmission Error
AIS
Remote Defect Indication
Severity:
Critical
Major
Minor
Warning
Cleared
Specific Problems:
External Clock In Down
Not Specified
Exec
Default
Cancel

FIG. 31

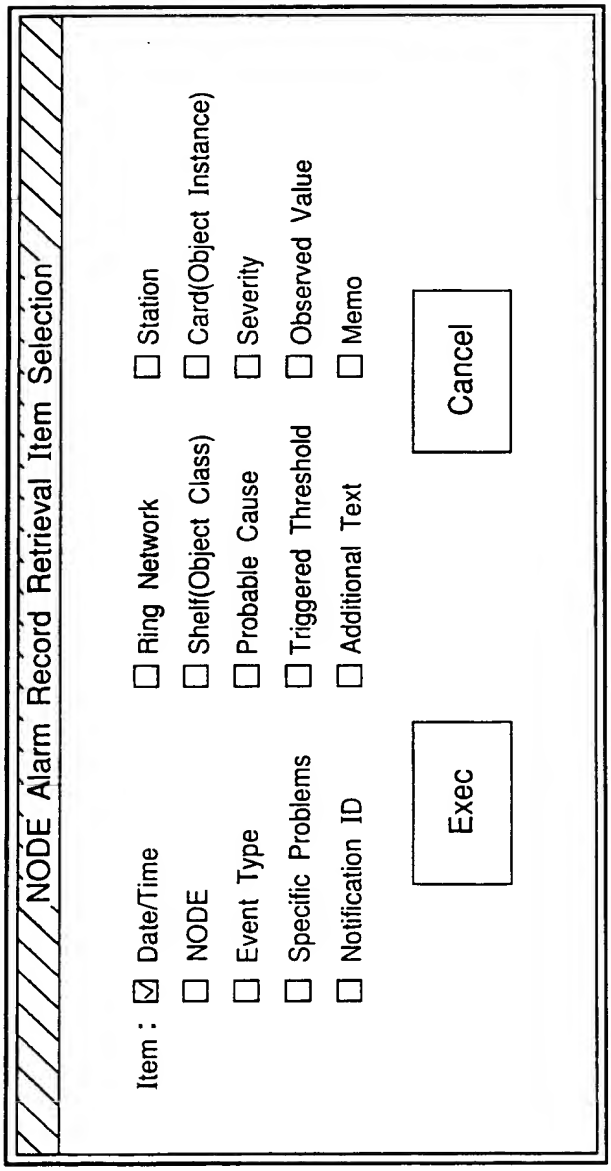
NODE Alarm Record Retrieval Item Selection
Item :
Date/Time
NODE
Event Type
Specific Problems
Notification ID
Ring Network
Shelf(Object Class)
Probable Cause
Triggered Threshold
Additional Text
Station
Card(Object Instance)
Severity
Observed Value
Memo
Exec
Cancel

FIG. 32

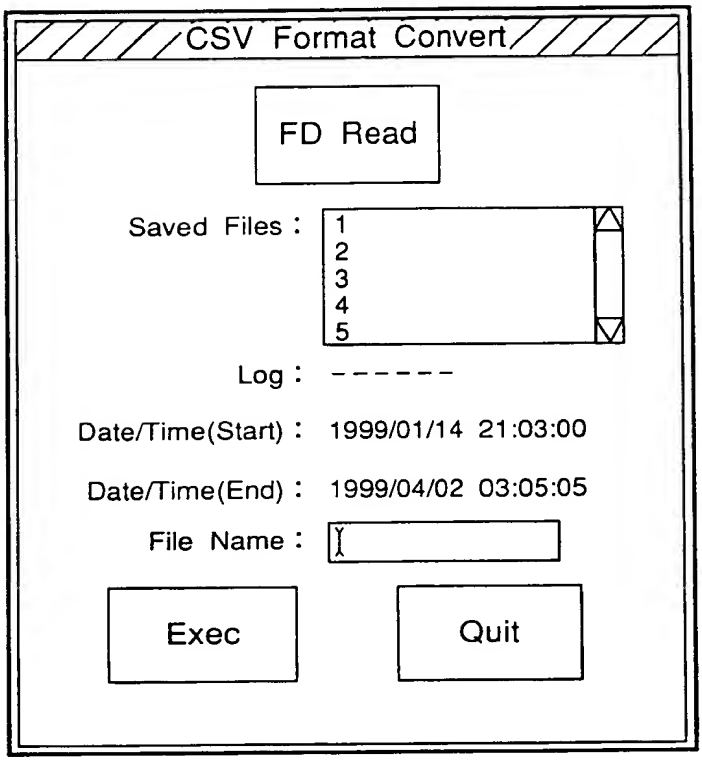
CSV Format Convert
FD Read
Saved Files :
1
2
3
4
5
Log : ------
Date/Time(Start) : 1999/01/14 21:03:00
Date/Time(End) : 1999/04/02 03:05:05
File Name :
Exec
Quit

FIG. 33

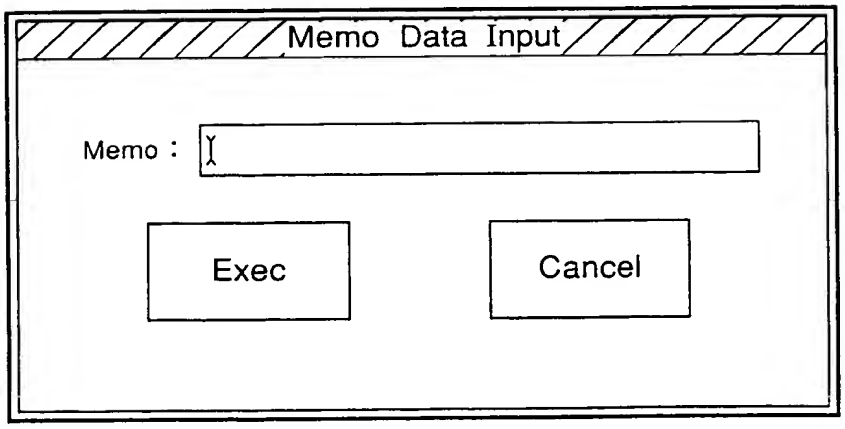
Memo Data Input
Memo :
Exec
Cancel

FIG. 34

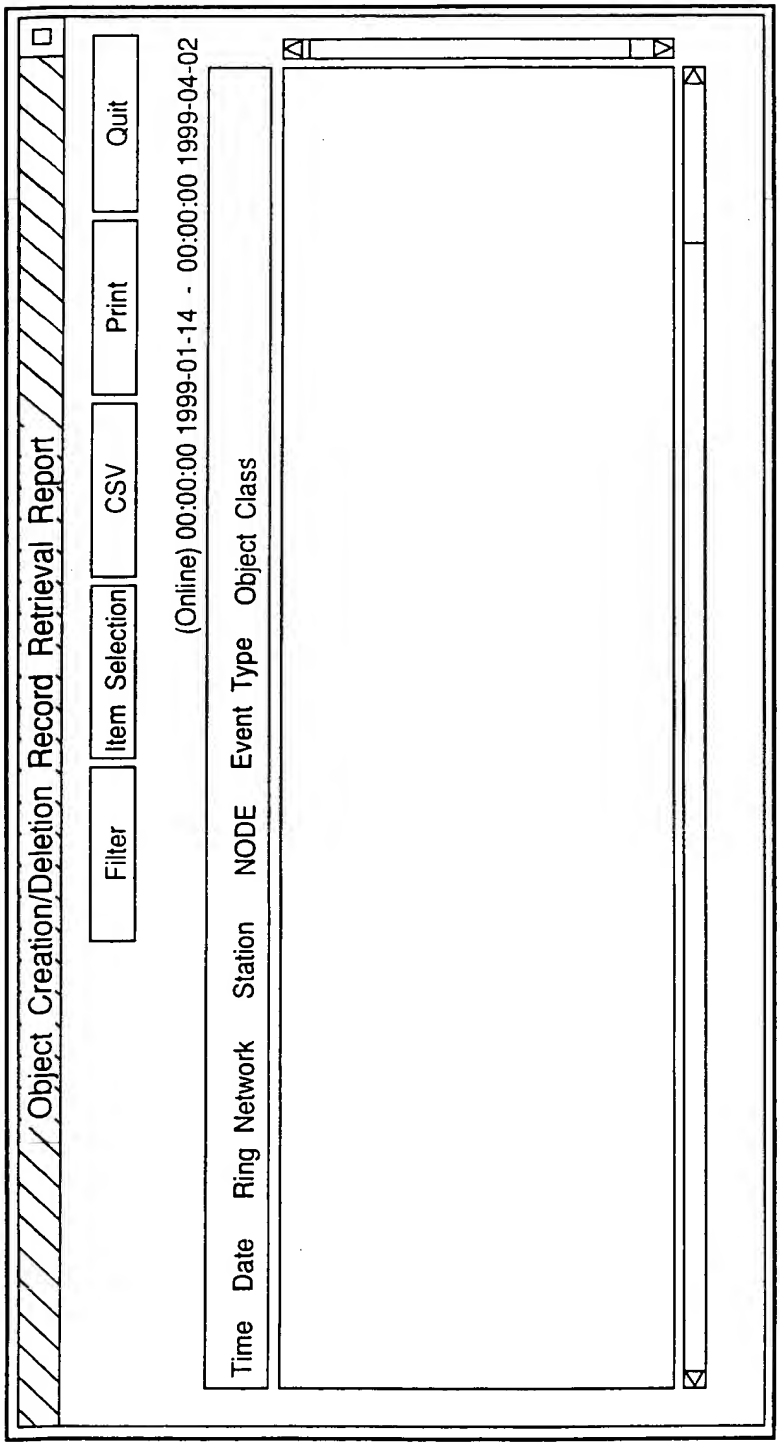
Object Creation/Deletion Record Retrieval Report
Filter
Item Selection
CSV
Print
Quit
(Online) 00:00:00 1999-01-14 - 00:00:00 1999-04-02
Time
Date
Ring
Network
Station
NODE
Event Type
Object Class

FIG. 35

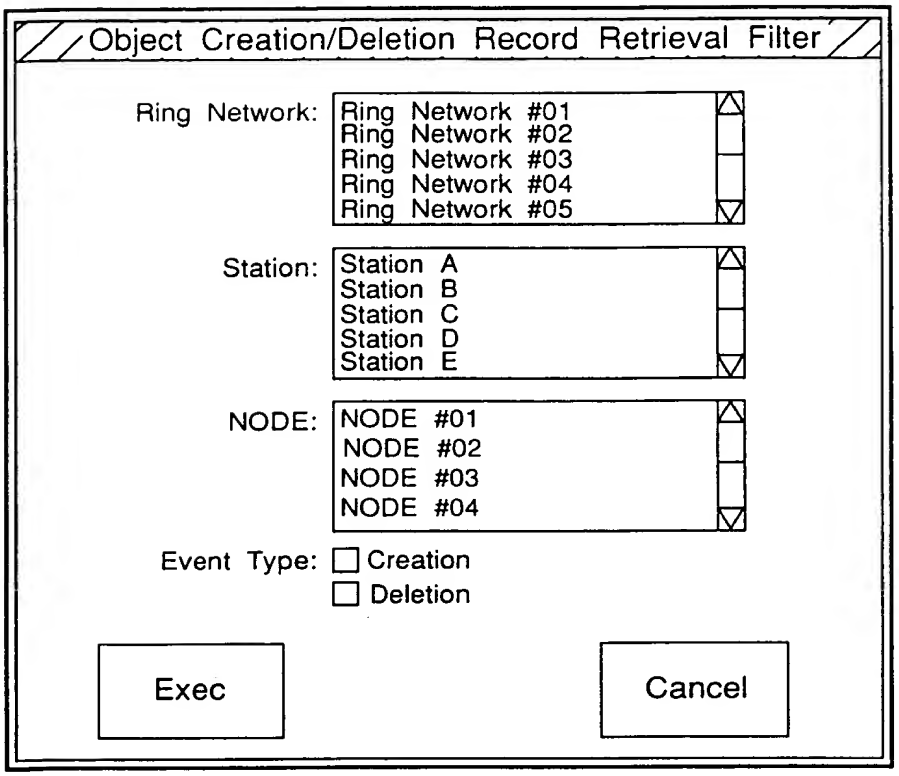
Object Creation/Deletion Record Retrieval Filter
Ring Network:
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Station:
Station A
Station B
Station C
Station D
Station E
NODE:
NODE #01
NODE #02
NODE #03
NODE #04
Event Type:
Creation
Deletion
Exec
Cancel

FIG. 36

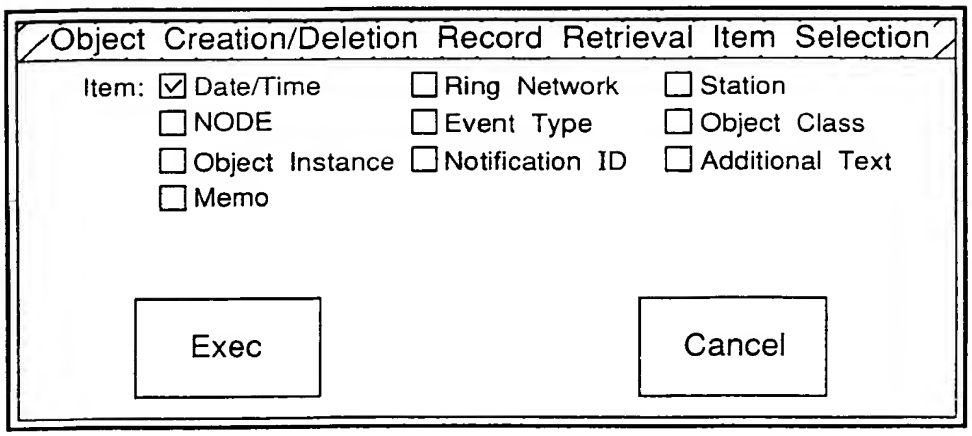
Object Creation/Deletion Record Retrieval Item Selection
Item:
Date/Time
Ring Network
Station
NODE
Event Type
Object Class
Object Instance
Notification ID
Additional Text
Memo
Exec
Cancel

FIG. 37

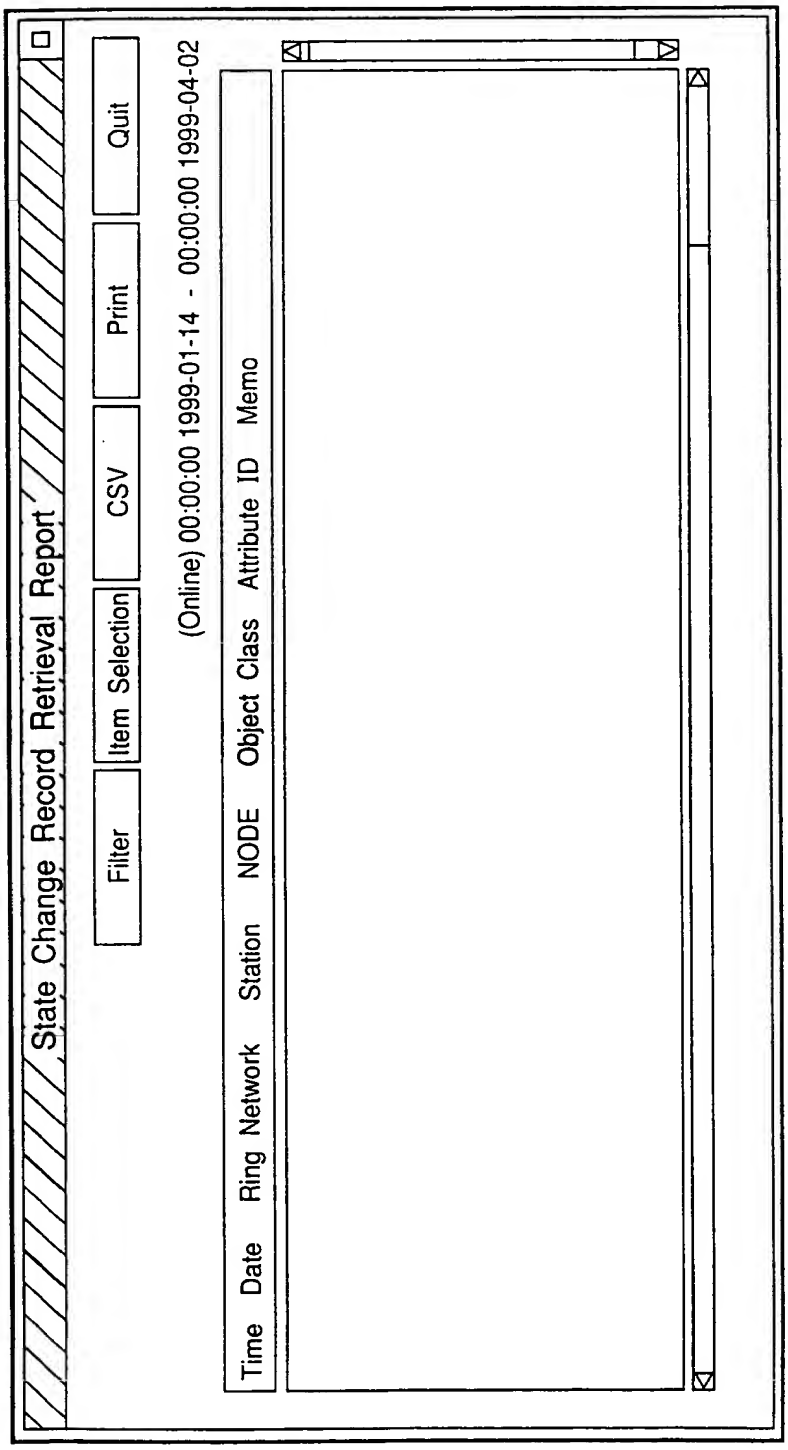
State Change Record Retrieval Report
Filter
Item Selection
CSV
Print
Quit
(Online) 00:00:00 1999-01-14 - 00:00:00 1999-04-02
Time
Date
Ring
Network
Station
NODE
Object Class
Attribute ID
Memo

FIG. 38

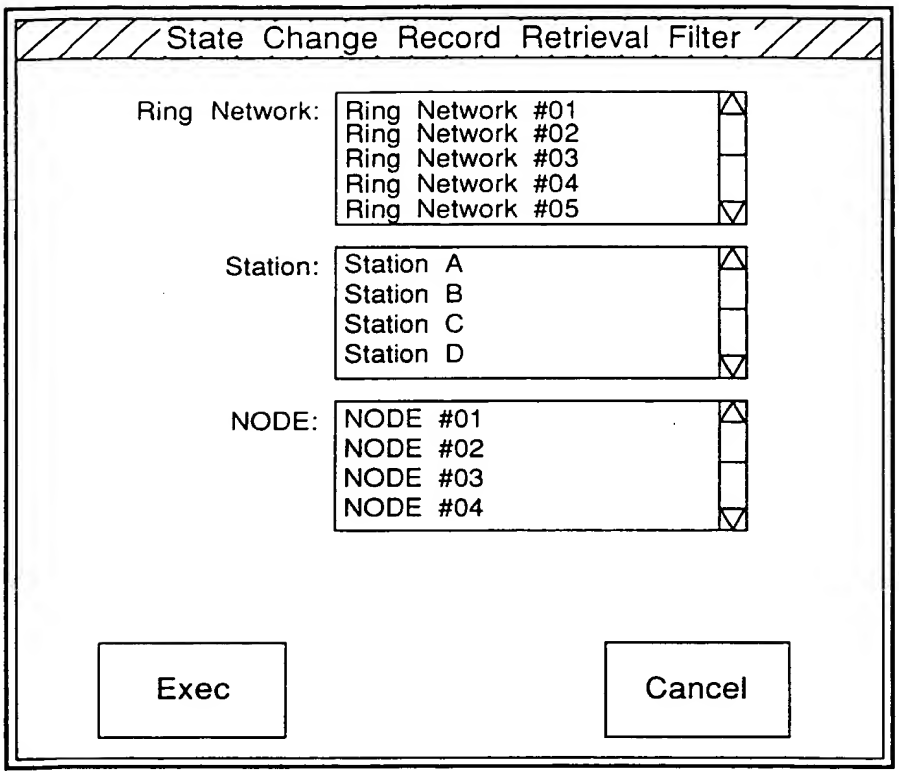
State Change Record Retrieval Filter
Ring Network:
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Station:
Station A
Station B
Station C
Station D
NODE:
NODE #01
NODE #02
NODE #03
NODE #04
Exec
Cancel

FIG. 39

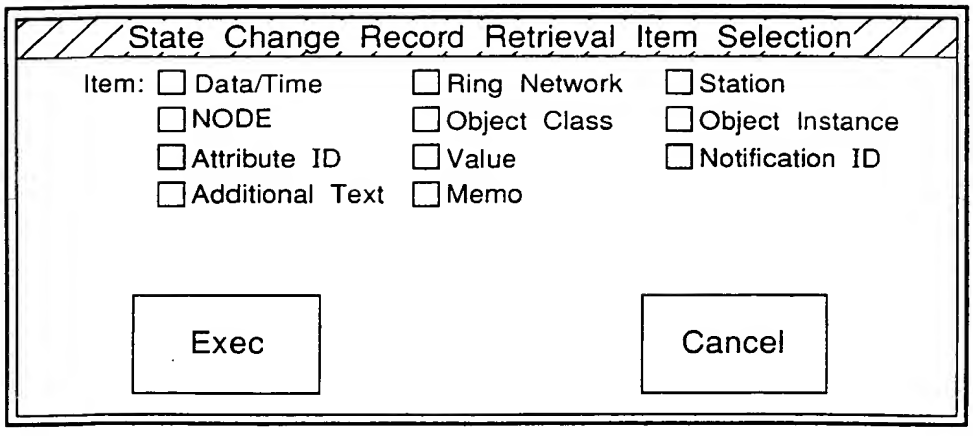
State Change Record Retrieval Item Selection
Item:
Data/Time
Ring Network
Station
NODE
Object Class
Object Instance
Attribute ID
Value
Notification ID
Additional Text
Memo
Exec
Cancel

FIG. 40

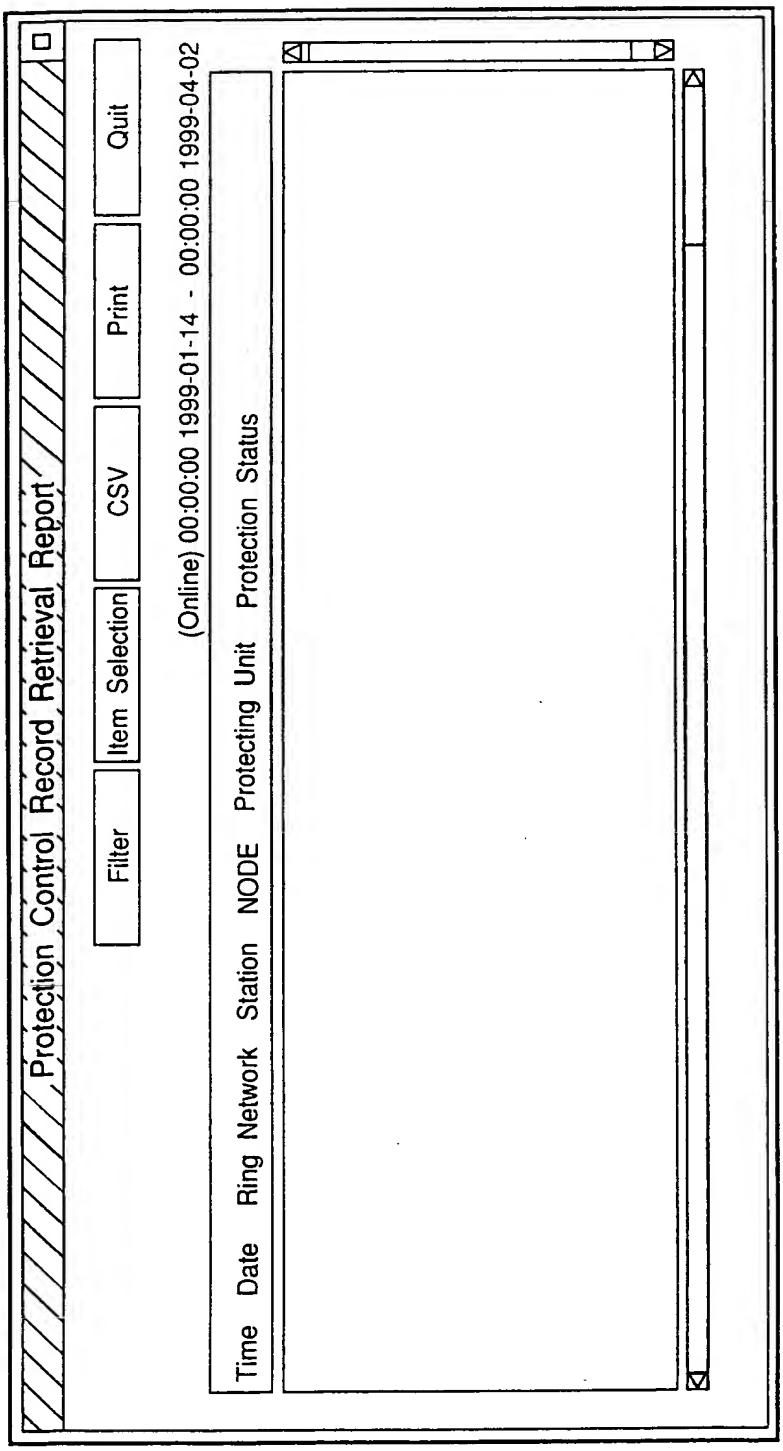
Protection Control Record Retrieval Report
Filter
Item Selection
CSV
Print
Quit
(Online) 00:00:00 1999-01-14 - 00:00:00 1999-04-02
Time Date Ring Network Station NODE Protecting Unit Protection Status

FIG. 41

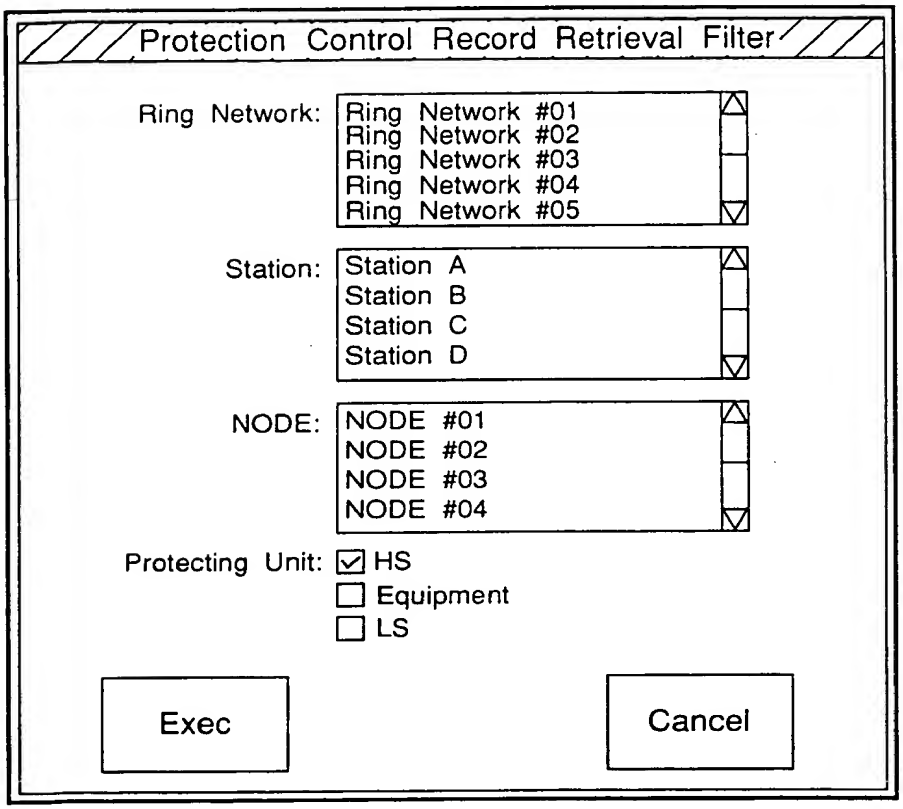
Protection Control Record Retrieval Filter
Ring Network:
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Station:
Station A
Station B
Station C
Station D
NODE:
NODE #01
NODE #02
NODE #03
NODE #04
Protecting Unit:
HS
Equipment
LS
Exec
Cancel

FIG. 42

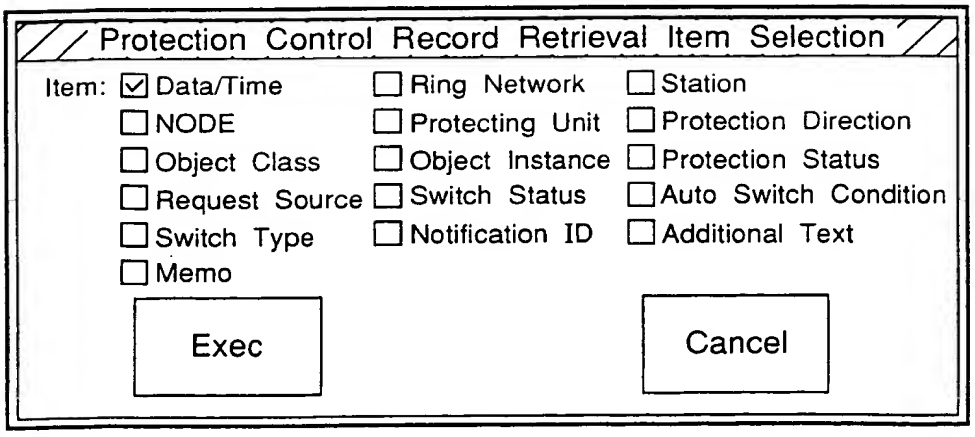
Protection Control Record Retrieval Item Selection
Item:
Data/Time
Ring Network
Station
NODE
Protecting Unit
Protection Direction
Object Class
Object Instance
Protection Status
Request Source
Switch Status
Auto Switch Condition
Switch Type
Notification ID
Additional Text
Memo
Exec
Cancel

FIG. 43

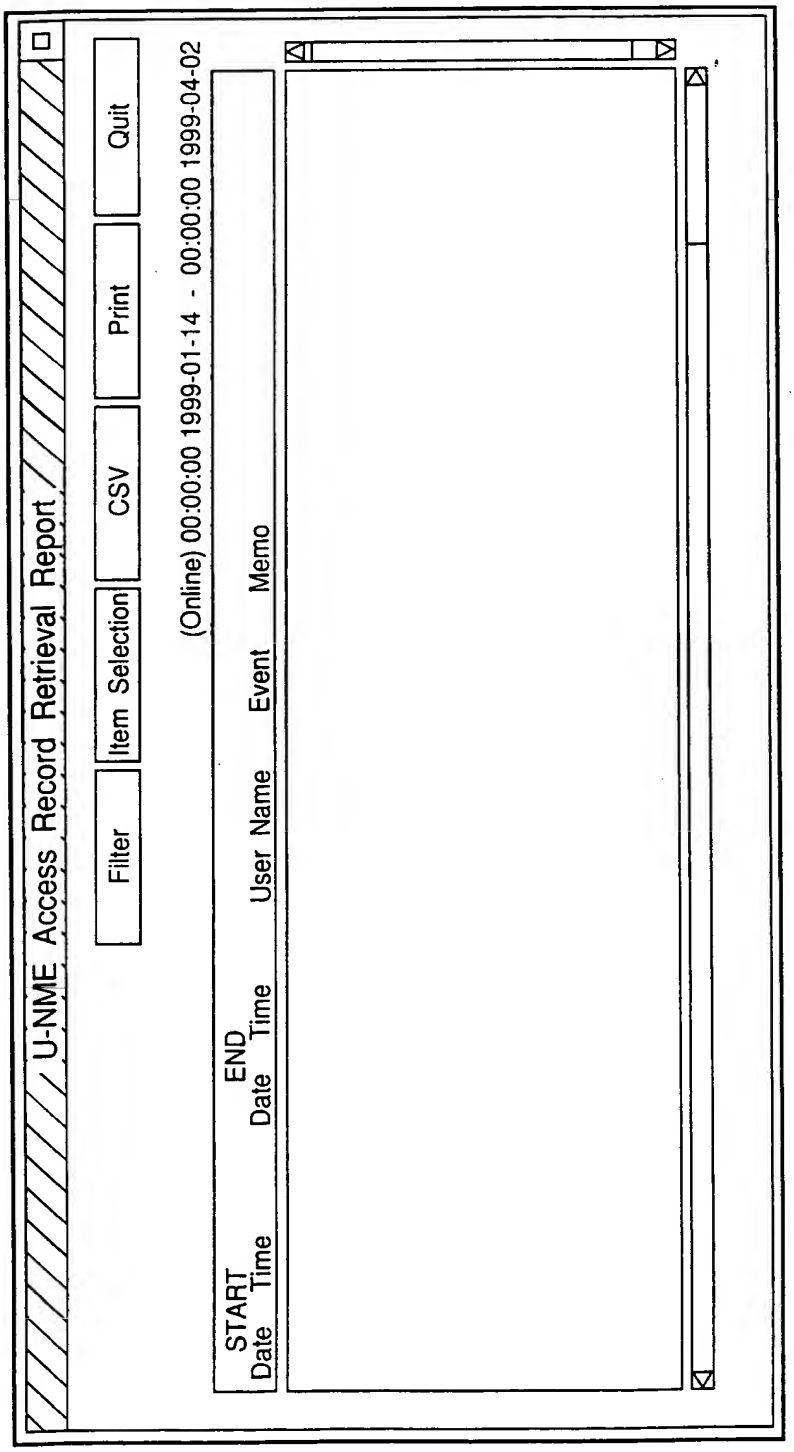
U-NME Access Record Retrieval Report
Filter
Item Selection
CSV
Print
Quit
(Online) 00:00:00 1999-01-14 - 00:00:00 1999-04-02
START
Date Time
END
Date Time
User Name
Event
Memo

FIG. 44

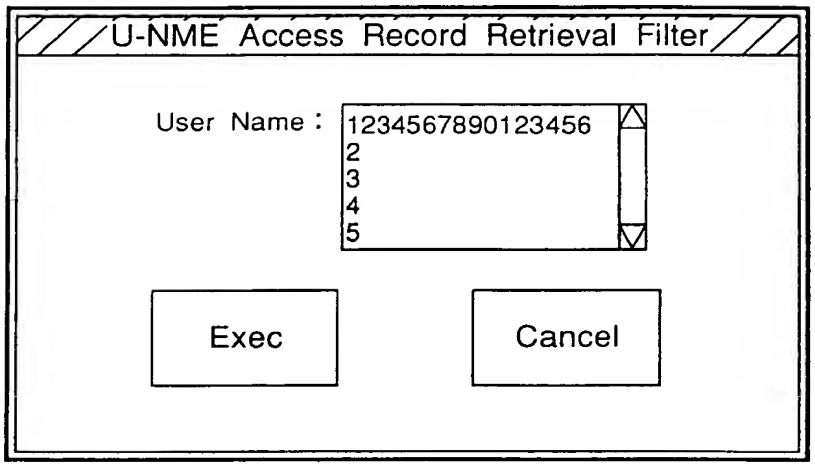
U-NME Access Record Retrieval Filter
User Name :
1234567890123456
2
3
4
5
Exec
Cancel

FIG. 45

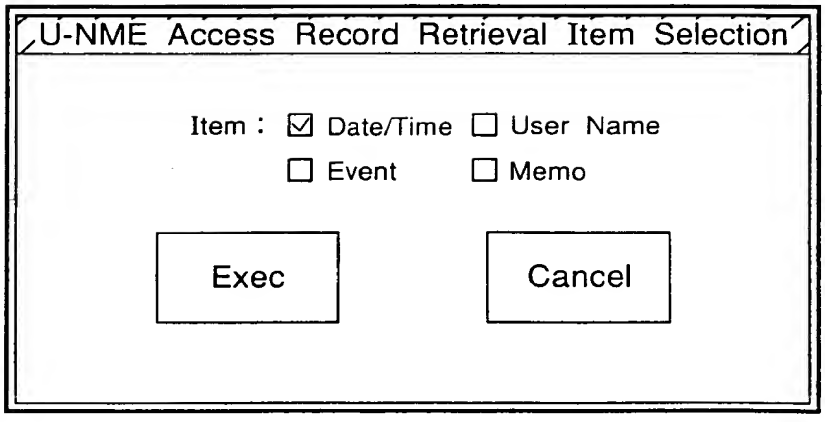
U-NME Access Record Retrieval Item Selection
Item :
Date/Time
User Name
Event
Memo
Exec
Cancel

FIG. 46

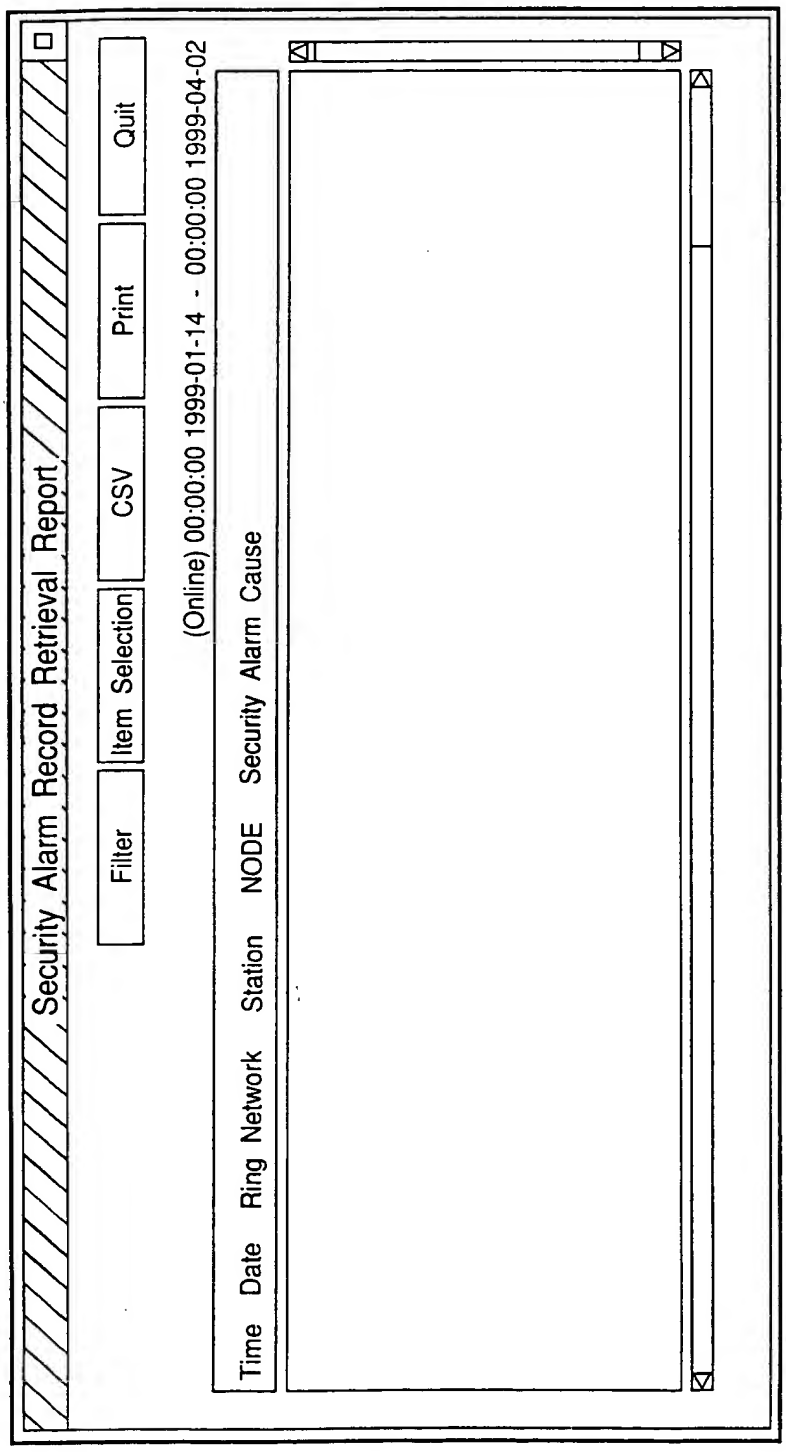
Security Alarm Record Retrieval Report
Filter
Item Selection
CSV
Print
Quit
(Online) 00:00:00 1999-01-14 - 00:00:00 1999-04-02
Time Date Ring Network Station NODE Security Alarm Cause

FIG. 47

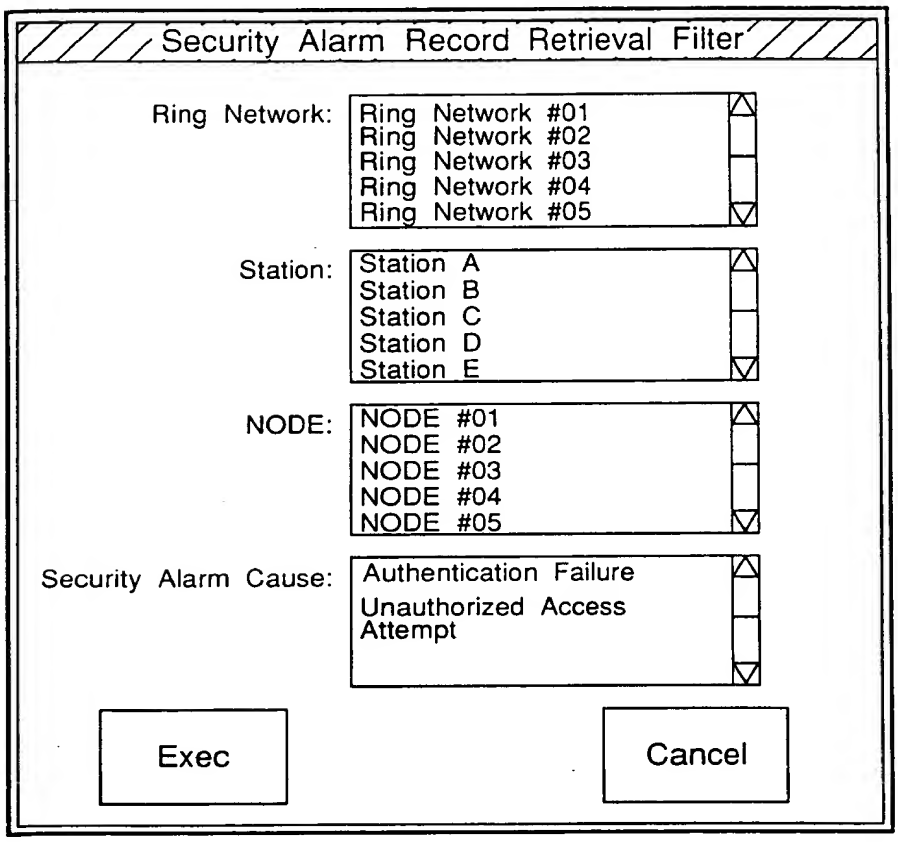
Security Alarm Record Retrieval Filter
Ring Network:
Ring Network #01
Ring Network #02
Ring Network #03
Ring Network #04
Ring Network #05
Station:
Station A
Station B
Station C
Station D
Station E
NODE:
NODE #01
NODE #02
NODE #03
NODE #04
NODE #05
Security Alarm Cause:
Authentication Failure
Unauthorized Access Attempt
Exec
Cancel

FIG. 48

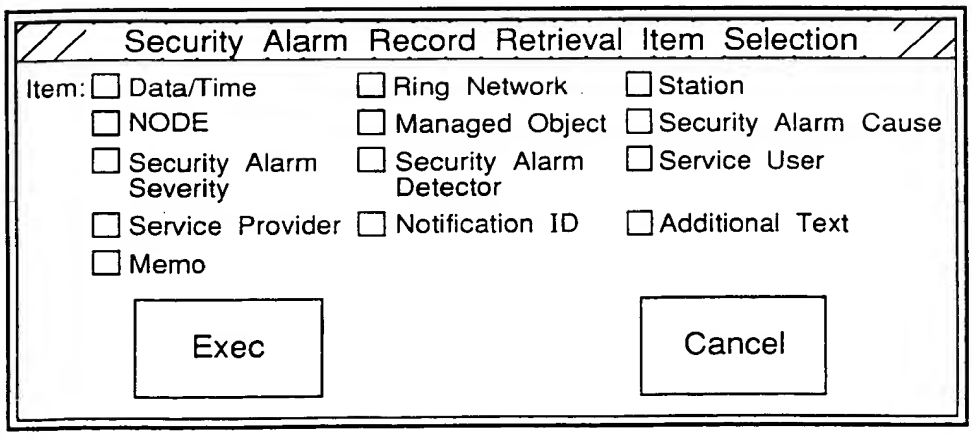
Security Alarm Record Retrieval Item Selection
Item:
Data/Time
Ring Network
Station
NODE
Managed Object
Security Alarm Cause
Security Alarm Severity
Security Alarm Detector
Service User
Service Provider
Notification ID
Additional Text
Memo
Exec
Cancel

FIG. 49

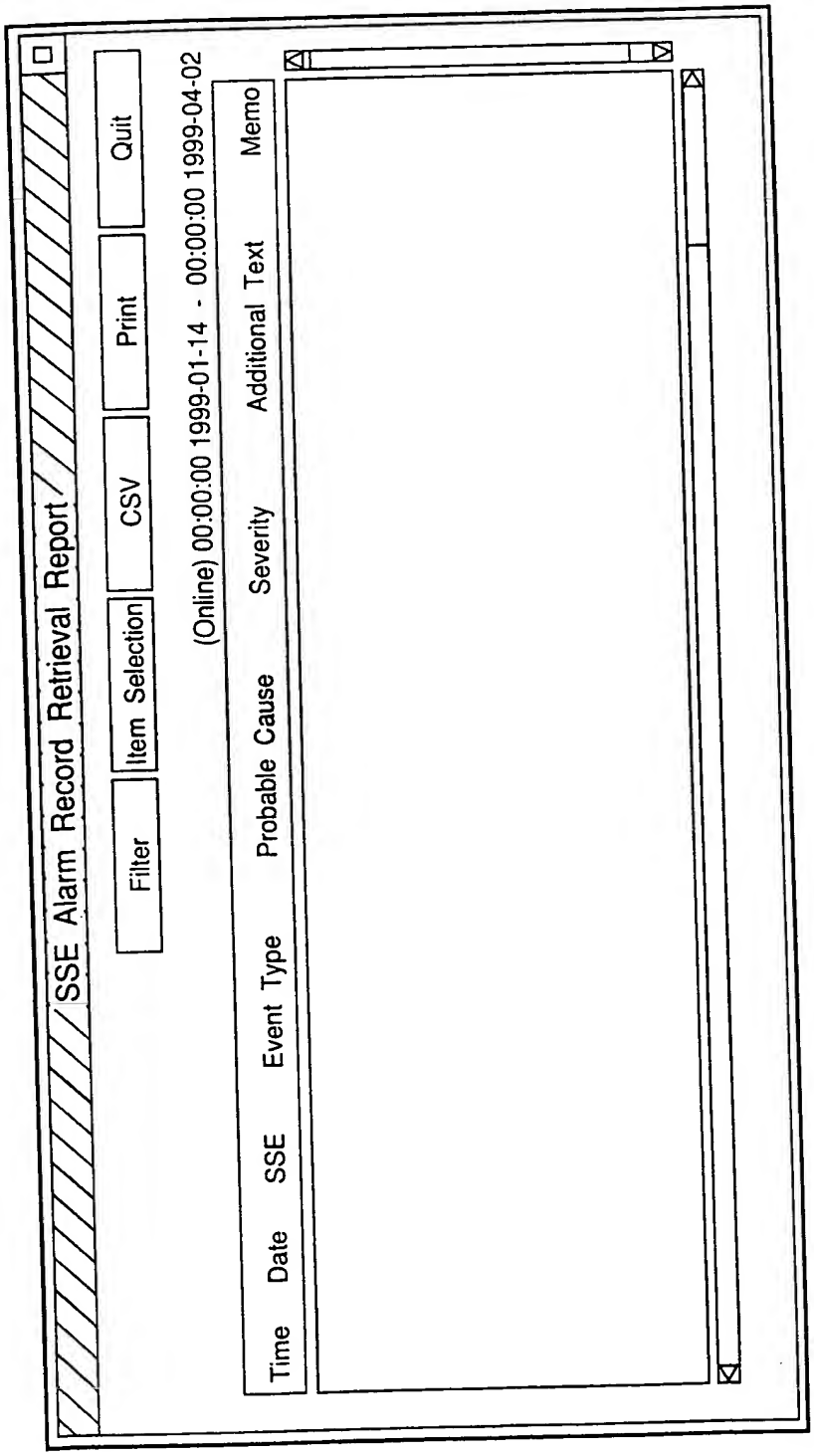
SSE Alarm Record Retrieval Report
Filter
Item Selection
CSV
Print
Quit
(Online) 00:00:00 1999-01-14 - 00:00:00 1999-04-02
Time
Date
SSE
Event Type
Probable Cause
Severity
Additional Text
Memo

FIG. 50

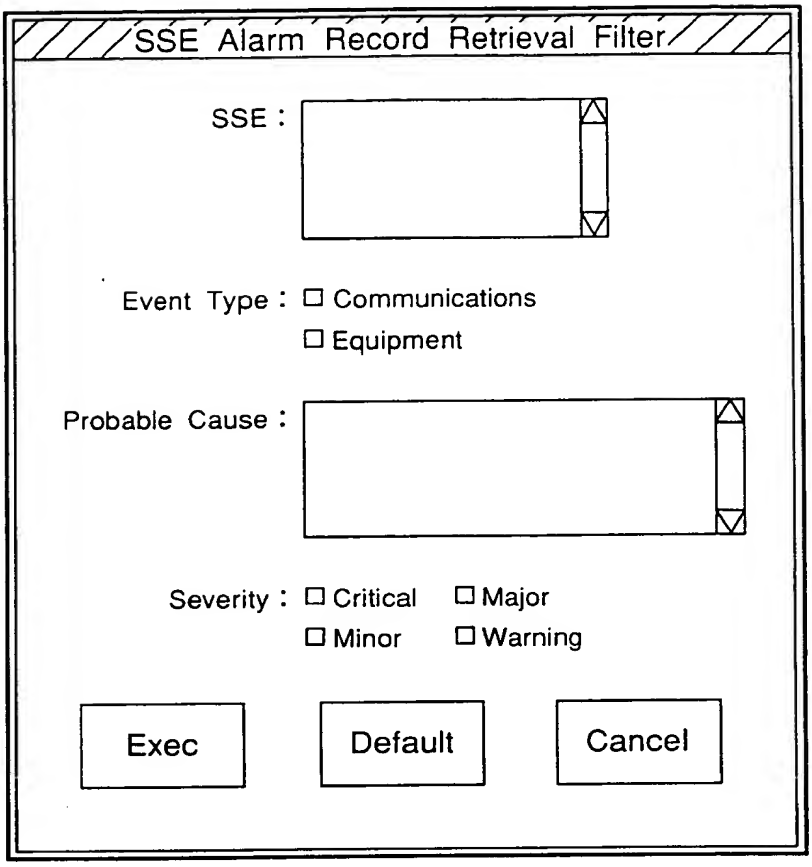
SSE Alarm Record Retrieval Filter
SSE :
Event Type : Communications
Equipment
Probable Cause :
Severity : Critical
Major
Minor
Warning
Exec
Default
Cancel

FIG. 51

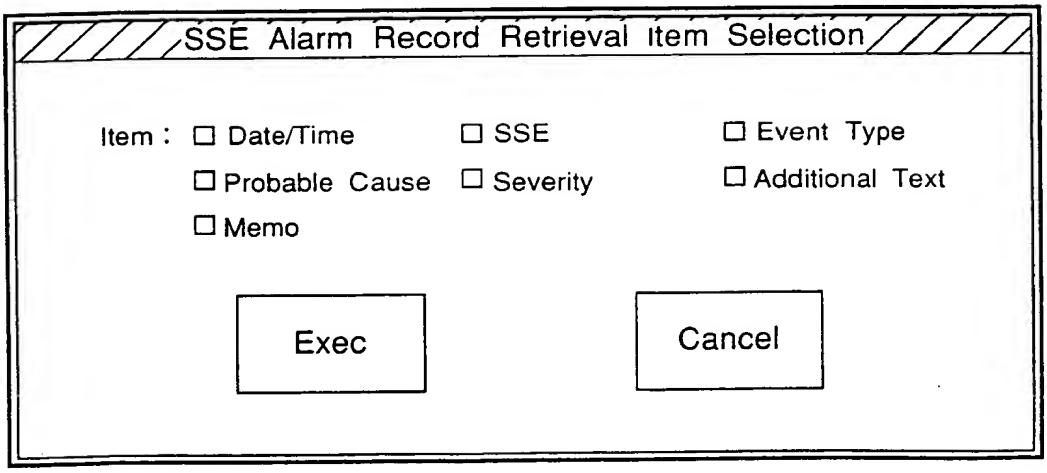
SSE Alarm Record Retrieval Item Selection
Item : Date/Time
SSE
Event Type
Probable Cause
Severity
Additional Text
Memo
Exec
Cancel

FIG. 52

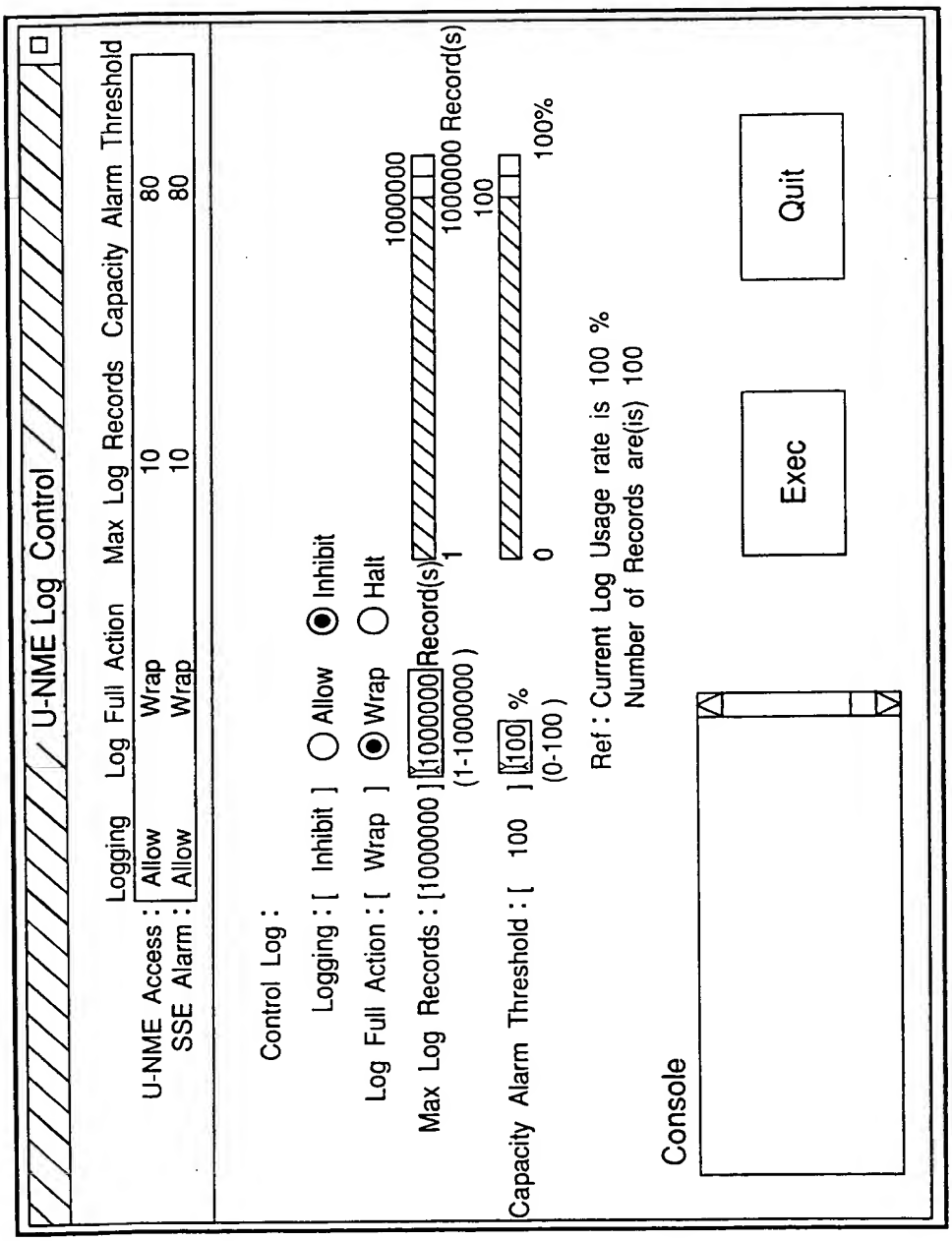
U-NME Log Control
Logging
Log Full Action
Max Log Records
Capacity Alarm Threshold
U-NME Access : Allow Wrap 10 80
SSE Alarm : Allow Wrap 10 80
Control Log :
Logging : [Inhibit] Allow Inhibit
Log Full Action : [Wrap] Wrap Halt
Max Log Records : [1000000] 1000000 Record(s)
(1-1000000)
1
1000000 Record(s)
Capacity Alarm Threshold : [100] 100 %
(0-100)
0
100
100%
Ref : Current Log Usage rate is 100 %
Number of Records are(is) 100
Console
Exec
Quit

FIG. 53

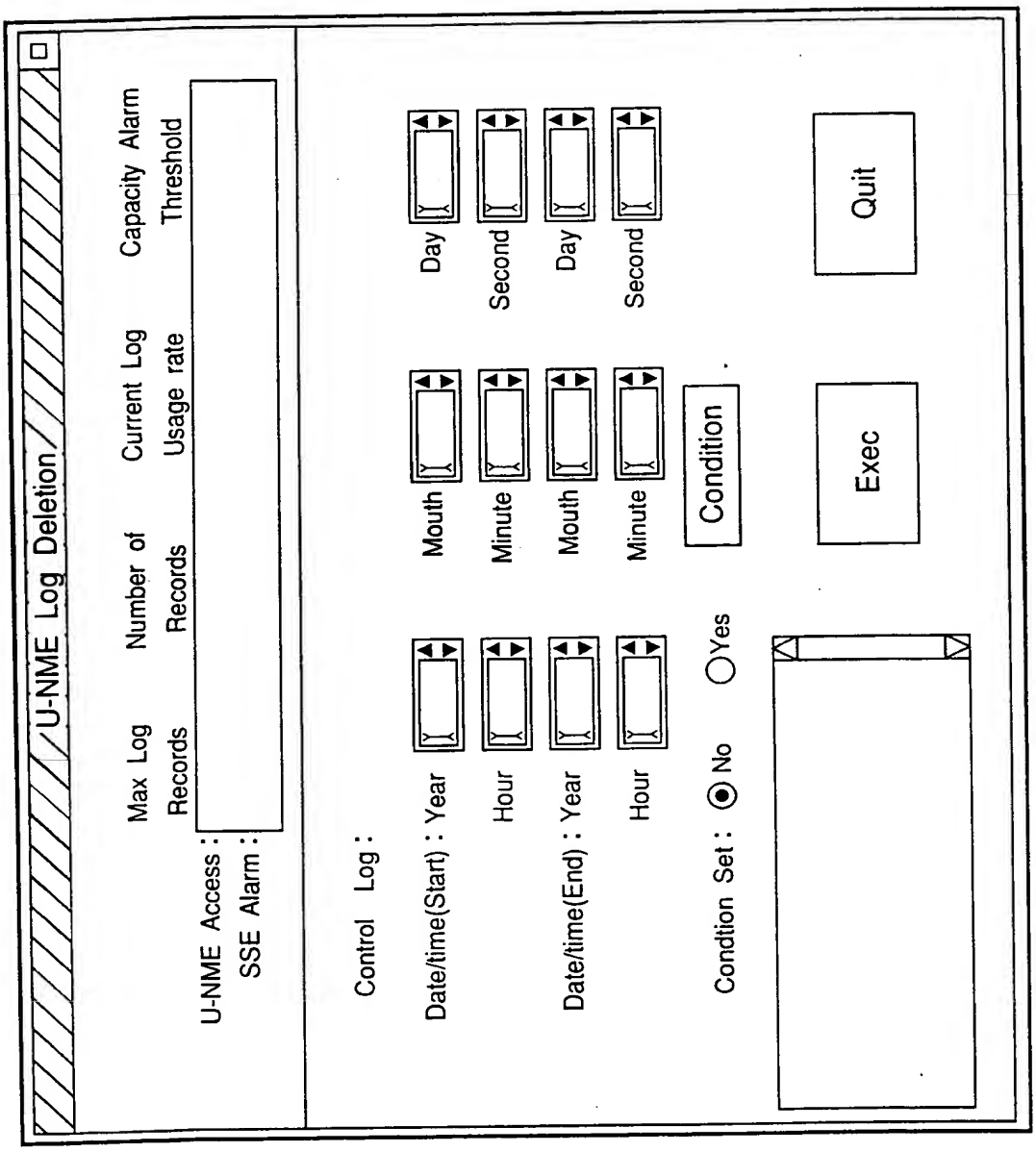
U-NME Log Deletion
Max Log Records
Number of Records
Current Log Usage rate
Capacity Alarm Threshold
U-NME Access :
SSE Alarm :
Control Log :
Date/time(Start) : Year
Hour
Mouth
Minute
Day
Second
Date/time(End) : Year
Hour
Mouth
Minute
Day
Second
Condition
Condtion Set : No Yes
Exec
Quit

FIG. 54

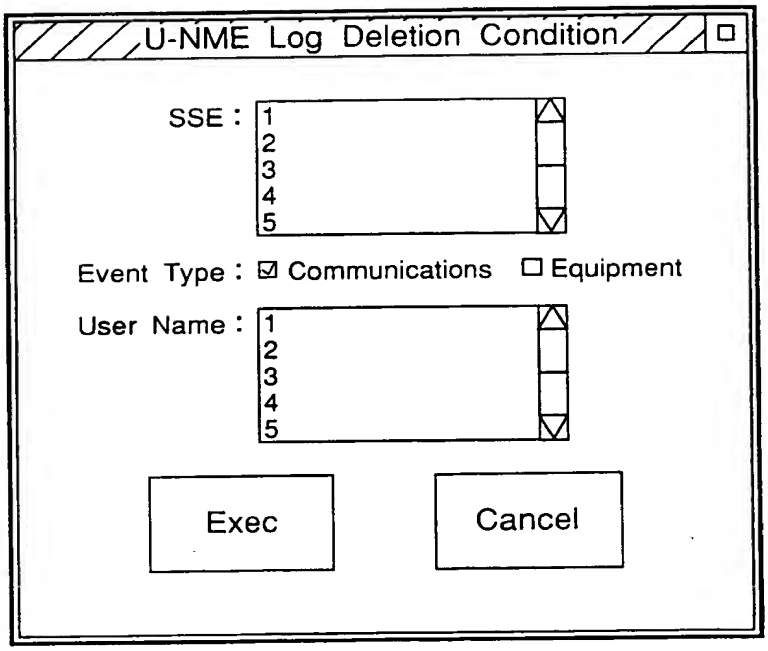
U-NME Log Deletion Condition
SSE :
1
2
3
4
5
Event Type : Communications Equipment
User Name :
1
2
3
4
5
Exec
Cancel

FIG. 55

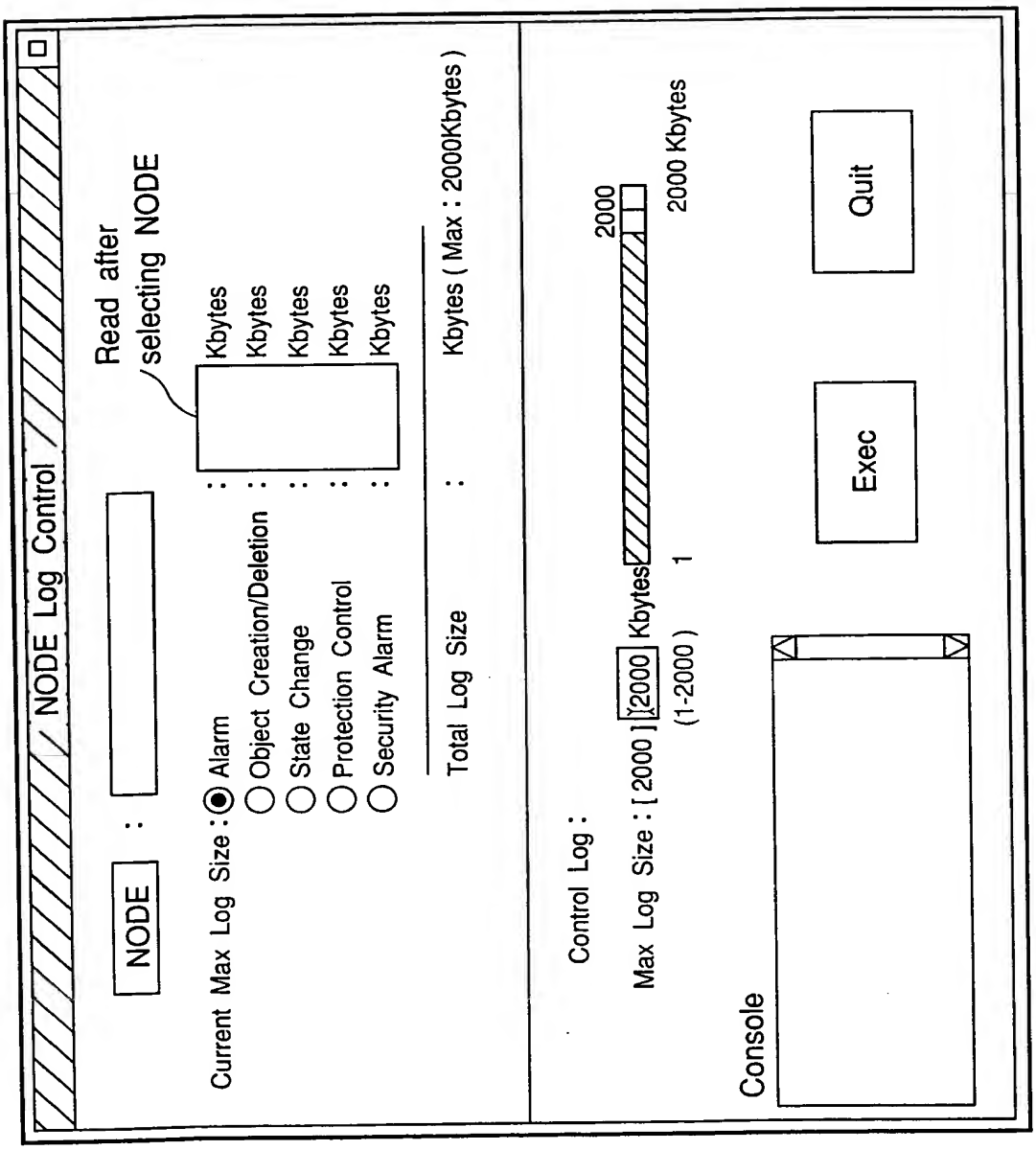
NODE Log Control
NODE
Read after selecting NODE
Current Max Log Size :
Alarm
Object Creation/Deletion
State Change
Protection Control
Security Alarm
Kbytes
Kbytes
Kbytes
Kbytes
Kbytes
Total Log Size
Kbytes (Max : 2000Kbytes)
Control Log :
Max Log Size : [2000] 2000 Kbytes
(1-2000)
1
2000
2000 Kbytes
Exec
Quit
Console

FIG. 56

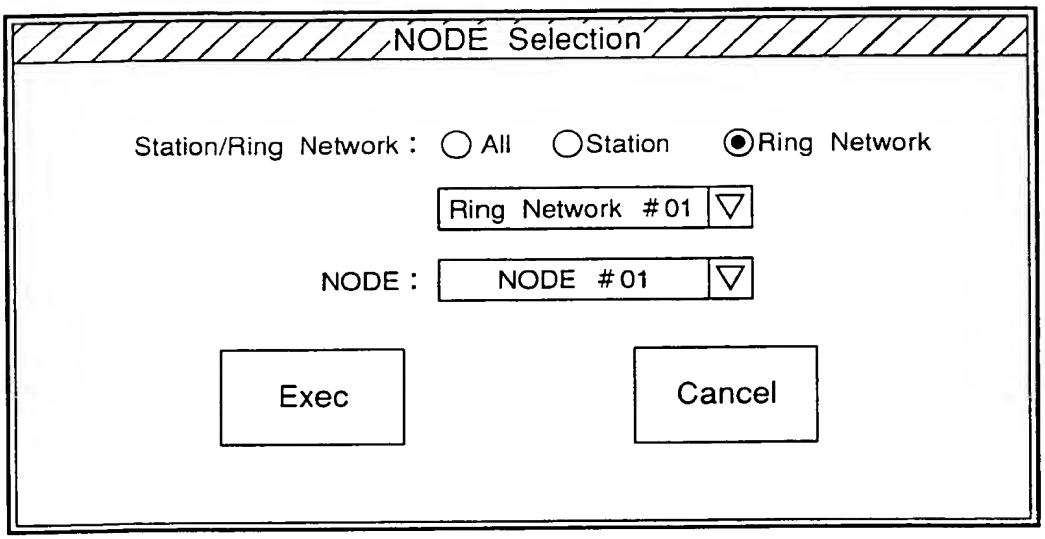
NODE Selection
Station/Ring Network :
All
Station
Ring Network
Ring Network #01
NODE :
NODE #01
Exec
Cancel

FIG. 57

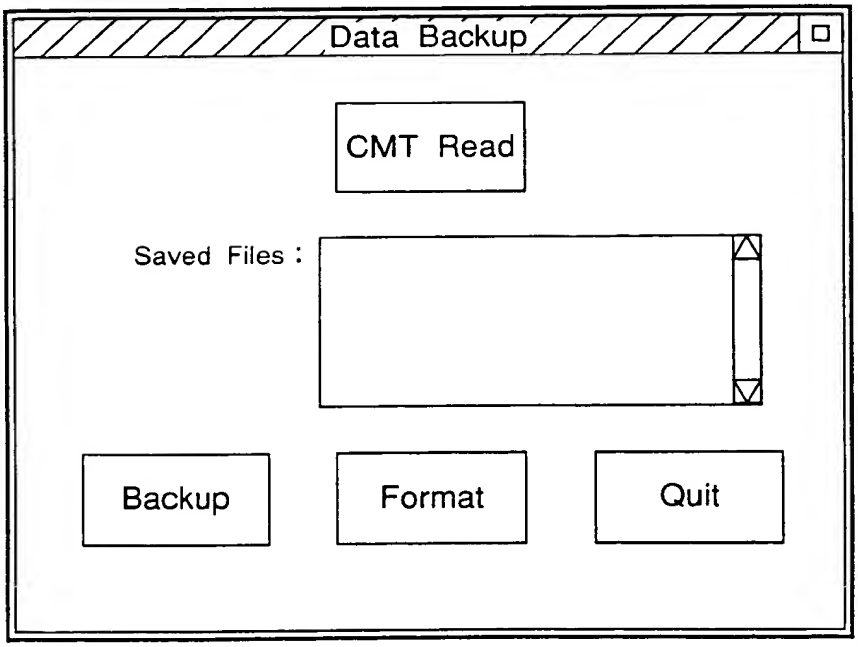
Data Backup
CMT Read
Saved Files :
Backup
Format
Quit

FIG. 58

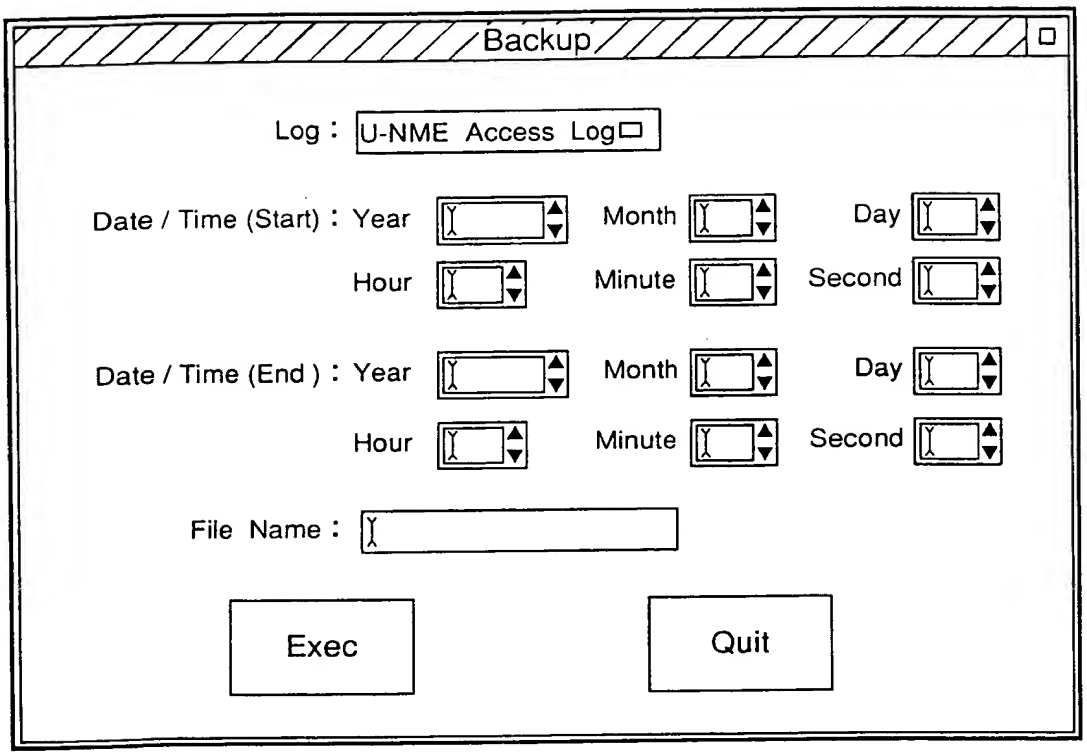
Backup
Log : U-NME Access Log
Date / Time (Start) : Year
Month
Day
Hour
Minute
Second
Date / Time (End) : Year
Month
Day
Hour
Minute
Second
File Name :
Exec
Quit

FIG. 59

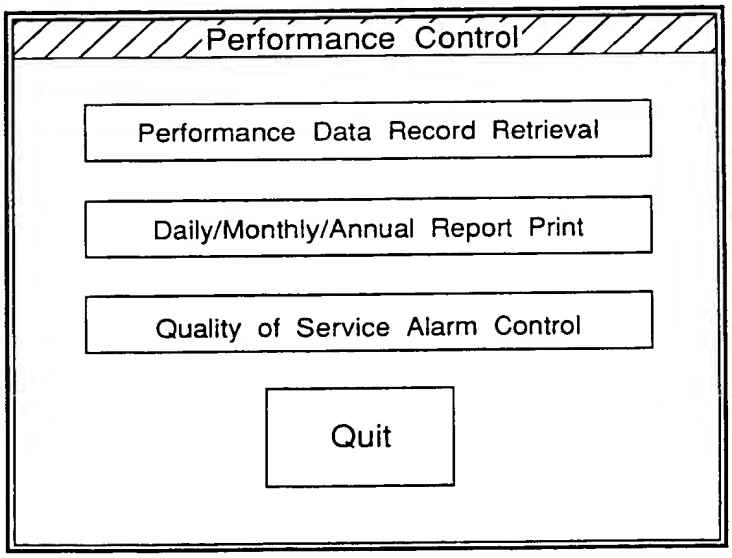
Performance Control
Performance Data Record Retrieval
Daily/Monthly/Annual Report Print
Quality of Service Alarm Control
Quit

FIG. 60

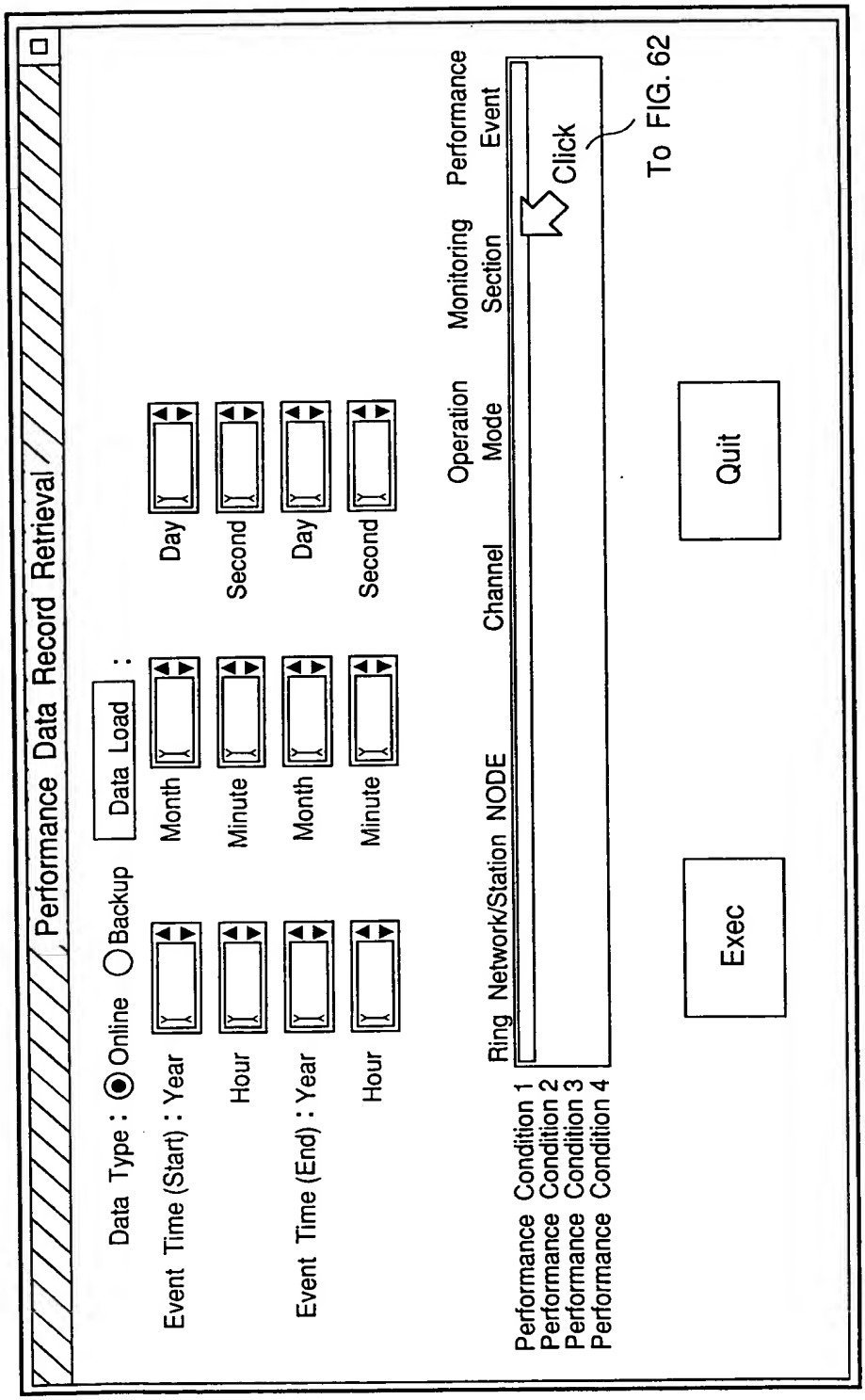
Performance Data Record Retrieval
Data Type : Online Backup
Data Load
Event Time (Start) : Year
Month
Day
Hour
Minute
Second
Event Time (End) : Year
Month
Day
Hour
Minute
Second
Performance Condition 1
Performance Condition 2
Performance Condition 3
Performance Condition 4
Ring Network/Station NODE
Channel
Operation Mode
Monitoring Section
Performance Event
Click
To FIG. 62
Exec
Quit

FIG. 61

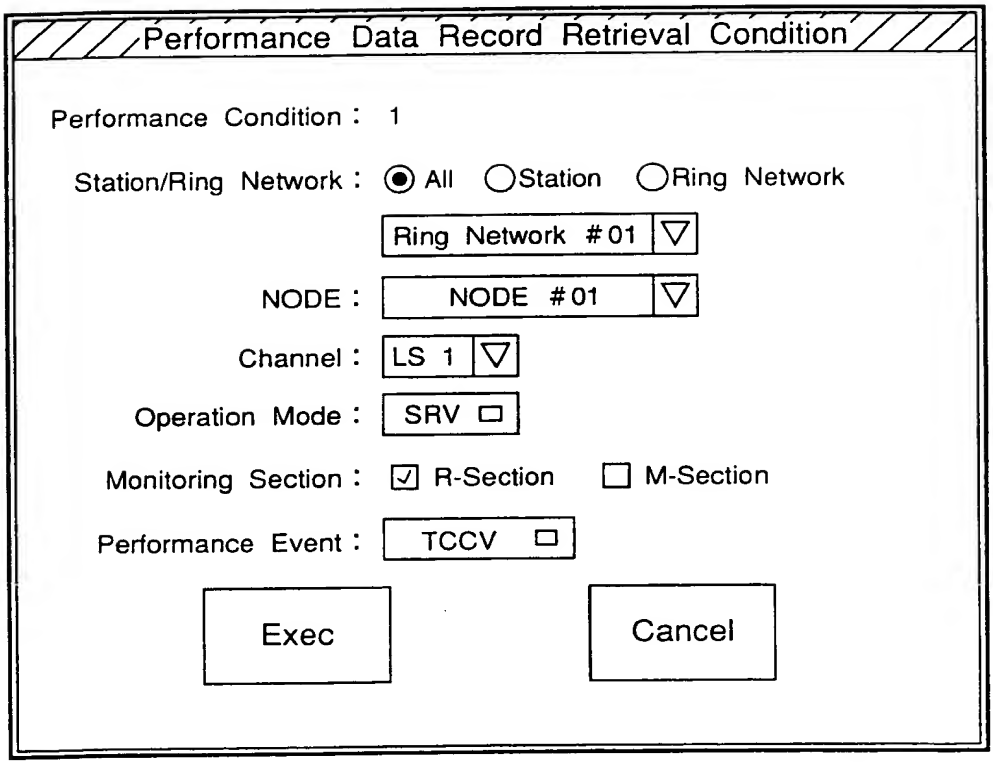
Performance Data Record Retrieval Condition
Performance Condition : 1
Station/Ring Network : All Station Ring Network
Ring Network #01
NODE :
NODE #01
Channel :
LS 1
Operation Mode :
SRV
Monitoring Section : R-Section M-Section
Performance Event :
TCCV
Exec
Cancel

FIG. 62

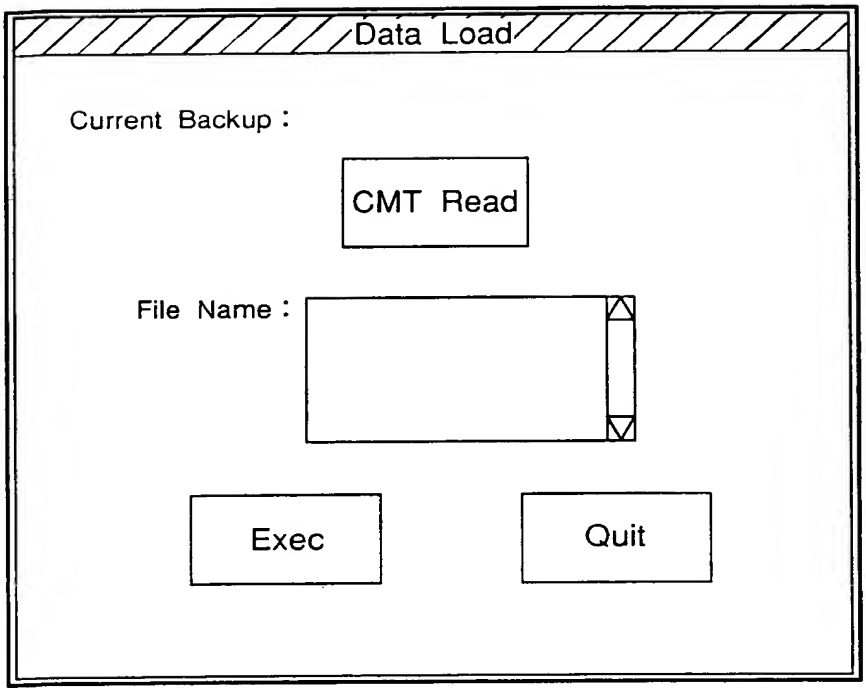

FIG. 63

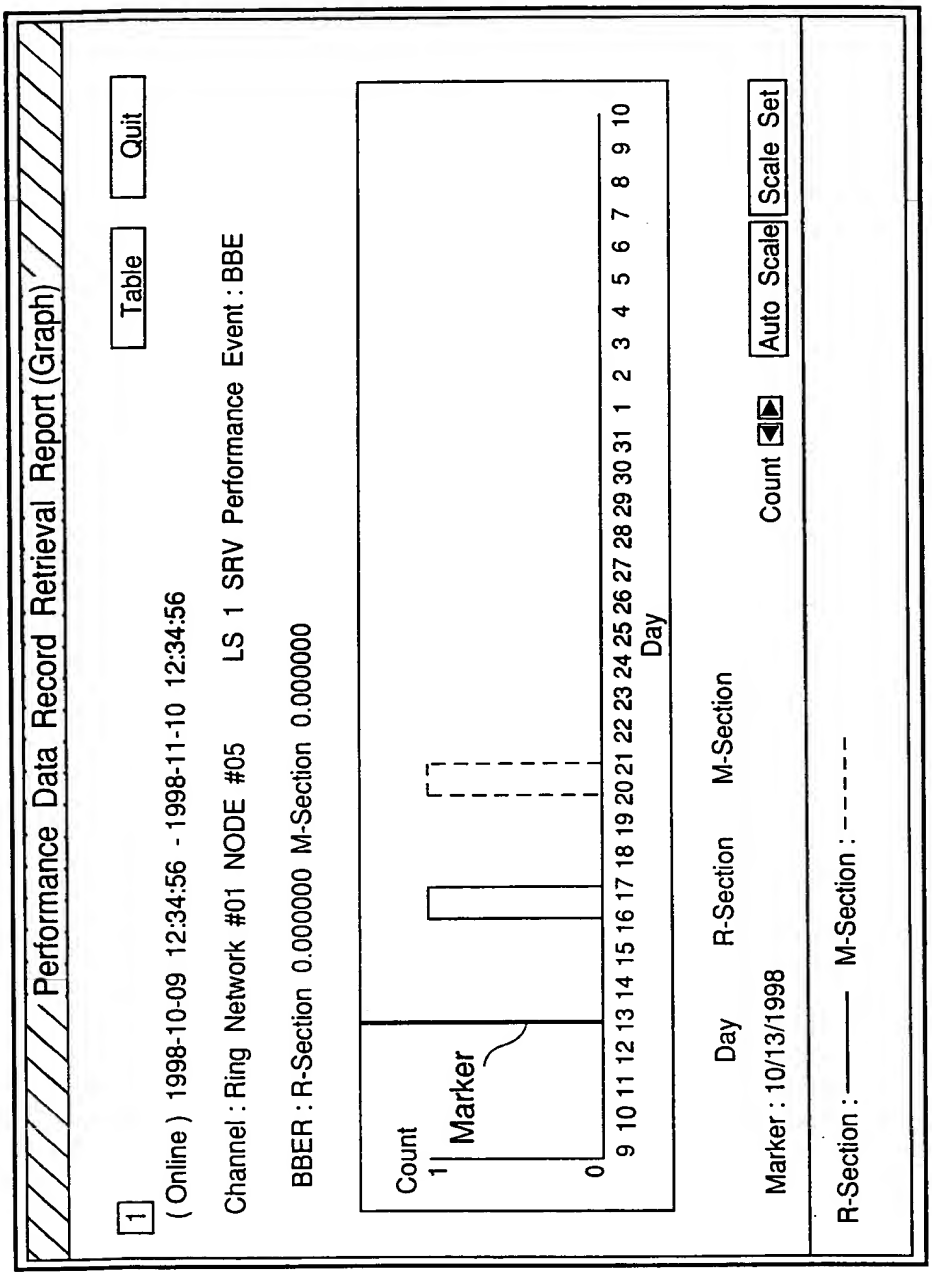
Performance Data Record Retrieval Report (Graph)
1
Table
Quit
(Online) 1998-10-09 12:34:56 - 1998-11-10 12:34:56
Channel : Ring Network #01 NODE #05 LS 1 SRV Performance Event : BBE
BBER : R-Section 0.000000 M-Section 0.000000
Count
1
Marker
0
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10
Day
Day R-Section M-Section
Count
Auto Scale
Scale Set
Marker : 10/13/1998
R-Section : ——— M-Section : - - - - -

FIG. 64

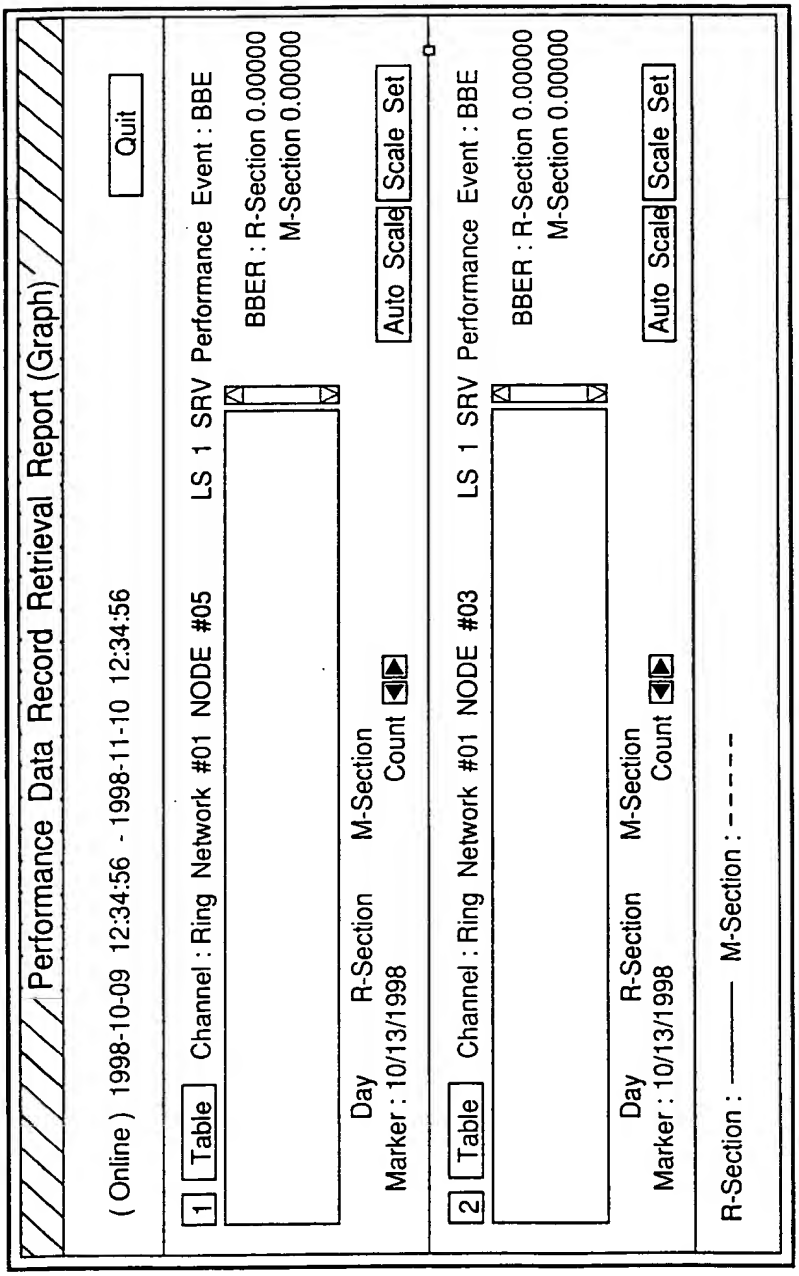
Performance Data Record Retrieval Report (Graph)
Quit
(Online) 1998-10-09 12:34:56 - 1998-11-10 12:34:56
1 Table Channel : Ring Network #01 NODE #05 LS 1 SRV Performance Event : BBE
BBER : R-Section 0.00000
M-Section 0.00000
Auto Scale
Scale Set
Day
Marker : 10/13/1998
R-Section
M-Section
Count
2 Table Channel : Ring Network #01 NODE #03 LS 1 SRV Performance Event : BBE
BBER : R-Section 0.00000
M-Section 0.00000
Auto Scale
Scale Set
Day
Marker : 10/13/1998
R-Section
M-Section
Count
R-Section : ——— M-Section : - - - - -

FIG. 65

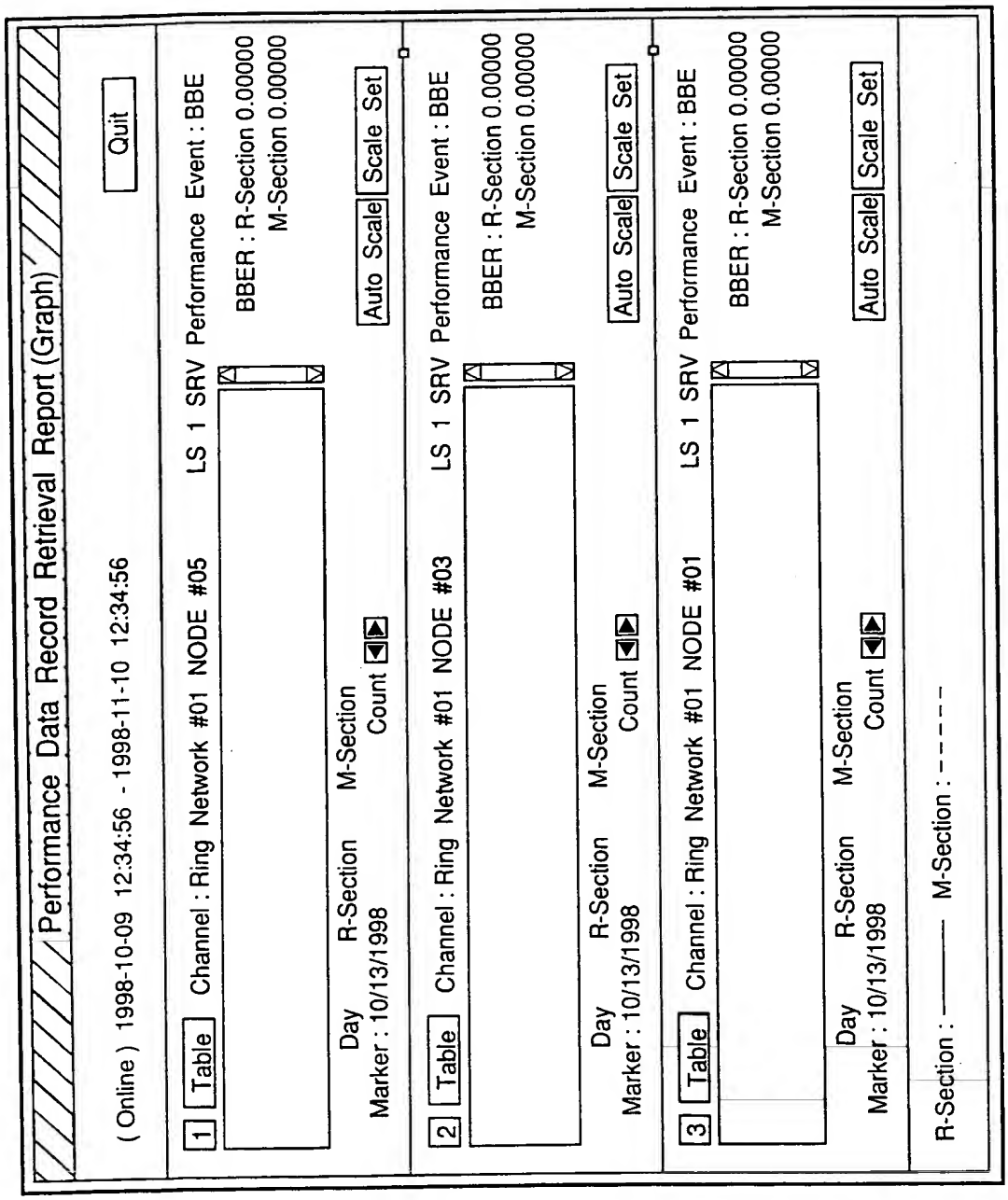
Performance Data Record Retrieval Report (Graph)
Quit
(Online) 1998-10-09 12:34:56 - 1998-11-10 12:34:56
1 Table Channel : Ring Network #01 NODE #05 LS 1 SRV Performance Event : BBE
BBER : R-Section 0.00000
M-Section 0.00000
Day R-Section M-Section
Marker : 10/13/1998 Count
Auto Scale Scale Set
2 Table Channel : Ring Network #01 NODE #03 LS 1 SRV Performance Event : BBE
BBER : R-Section 0.00000
M-Section 0.00000
Day R-Section M-Section
Marker : 10/13/1998 Count
Auto Scale Scale Set
3 Table Channel : Ring Network #01 NODE #01 LS 1 SRV Performance Event : BBE
BBER : R-Section 0.00000
M-Section 0.00000
Day R-Section M-Section
Marker : 10/13/1998 Count
Auto Scale Scale Set
R-Section : ——— M-Section : - - - - -

FIG. 66

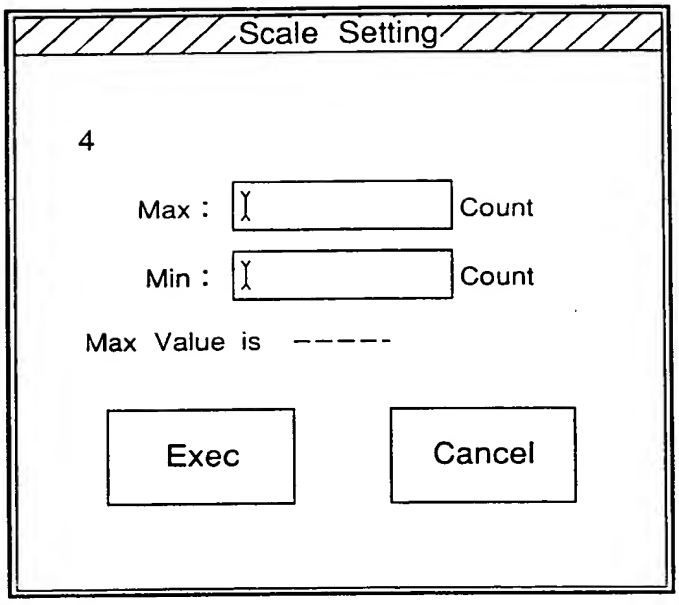

FIG. 67

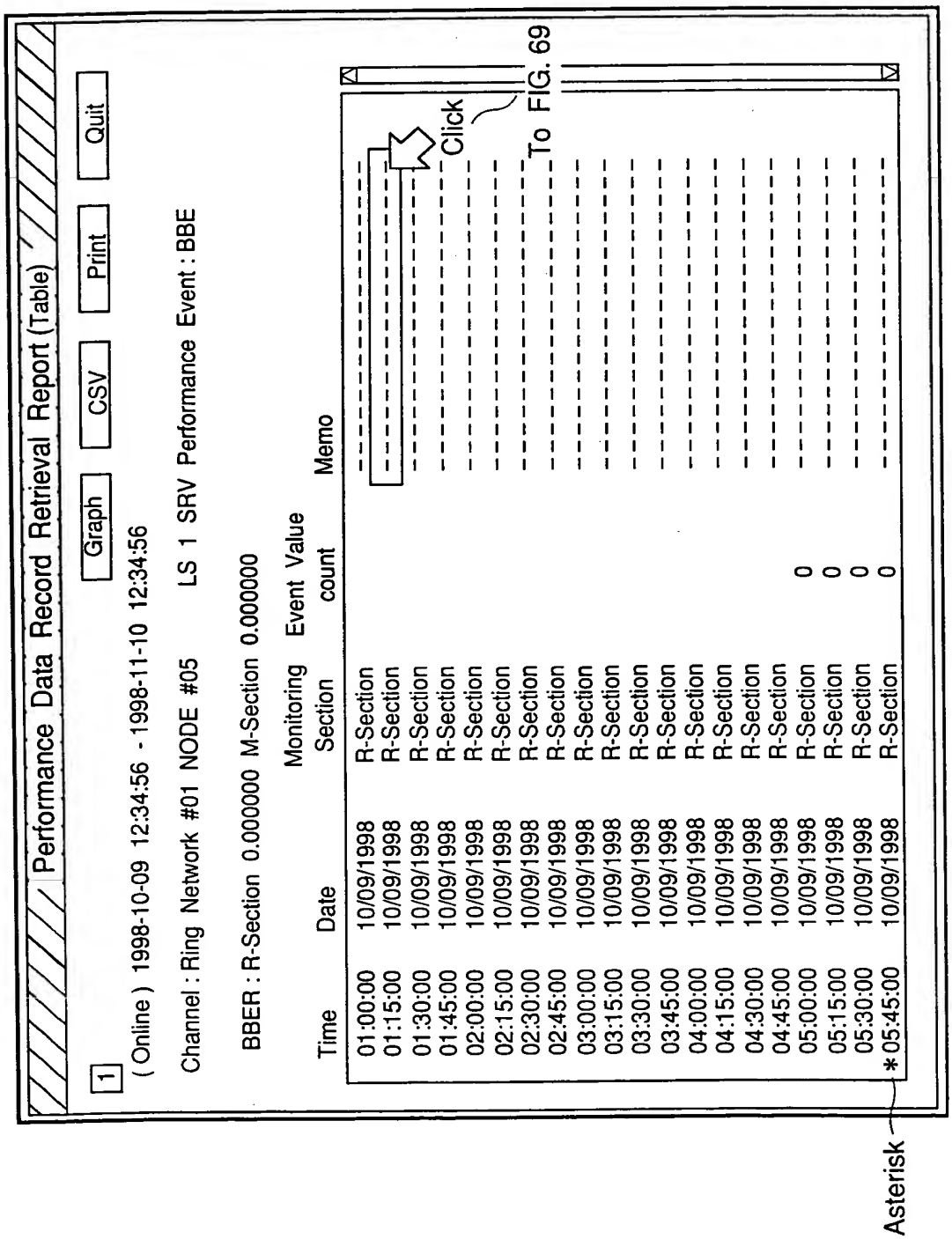
Performance Data Record Retrieval Report (Table)
1
Graph
CSV
Print
Quit
(Online) 1998-10-09 12:34:56 - 1998-11-10 12:34:56
Channel : Ring Network #01 NODE #05 LS 1 SRV Performance Event : BBE
BBER : R-Section 0.000000 M-Section 0.000000
Time
Date
Monitoring Section
Event Value count
Memo
01:00:00 10/09/1998 R-Section
01:15:00 10/09/1998 R-Section
01:30:00 10/09/1998 R-Section
01:45:00 10/09/1998 R-Section
02:00:00 10/09/1998 R-Section
02:15:00 10/09/1998 R-Section
02:30:00 10/09/1998 R-Section
02:45:00 10/09/1998 R-Section
03:00:00 10/09/1998 R-Section
03:15:00 10/09/1998 R-Section
03:30:00 10/09/1998 R-Section
03:45:00 10/09/1998 R-Section
04:00:00 10/09/1998 R-Section
04:15:00 10/09/1998 R-Section
04:30:00 10/09/1998 R-Section
04:45:00 10/09/1998 R-Section
05:00:00 10/09/1998 R-Section 0
05:15:00 10/09/1998 R-Section 0
05:30:00 10/09/1998 R-Section 0
*05:45:00 10/09/1998 R-Section 0
Click
To FIG. 69
Asterisk

FIG. 68

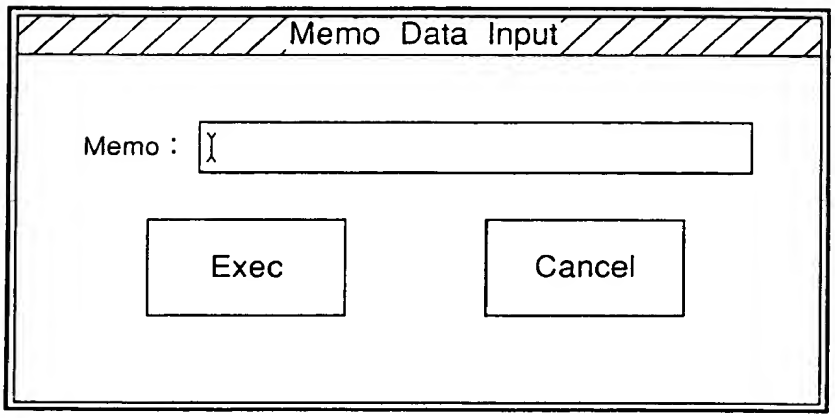
Memo Data Input
Memo :
Exec
Cancel

FIG. 69

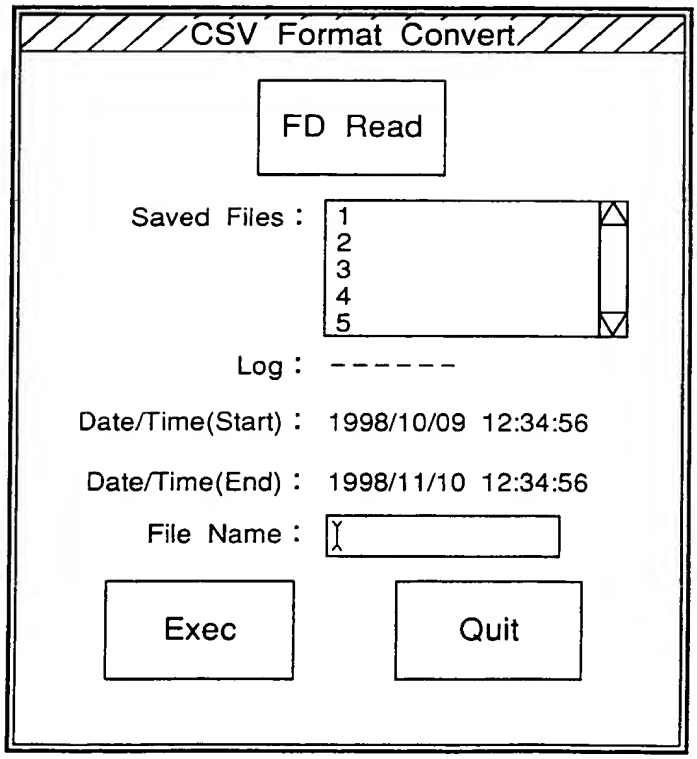
CSV Format Convert
FD Read
Saved Files :
1
2
3
4
5
Log : ------
Date/Time(Start) : 1998/10/09 12:34:56
Date/Time(End) : 1998/11/10 12:34:56
File Name :
Exec
Quit

FIG. 70

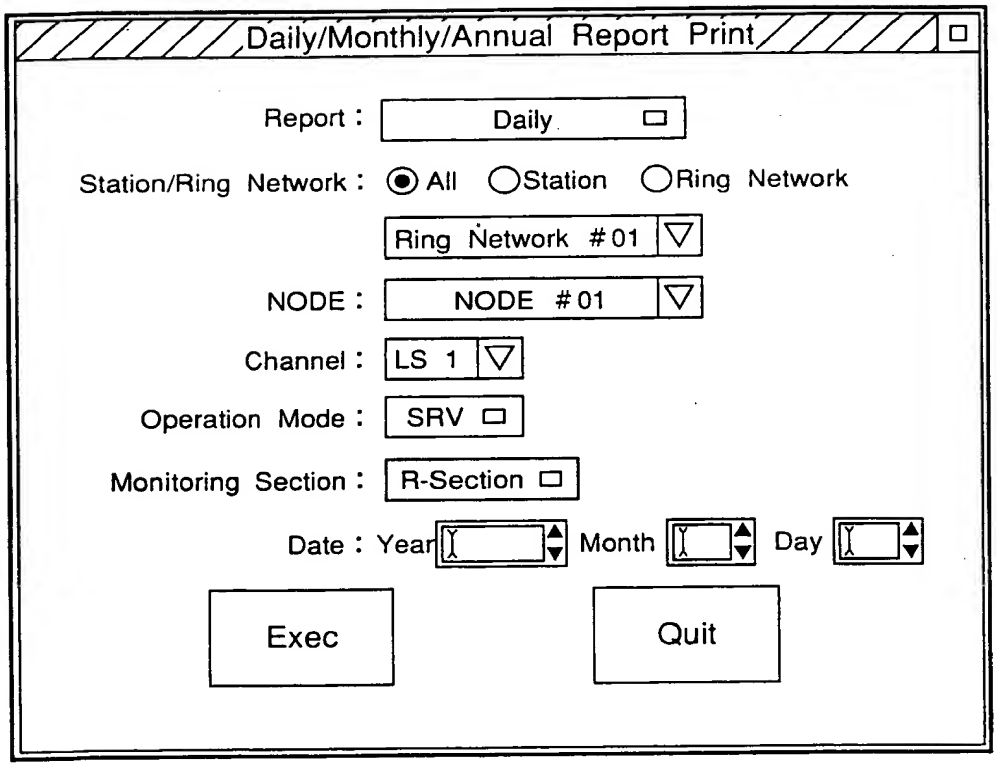
Daily/Monthly/Annual Report Print
Report :
Daily
Station/Ring Network :
All
Station
Ring Network
Ring Network #01
NODE :
NODE #01
Channel :
LS 1
Operation Mode :
SRV
Monitoring Section :
R-Section
Date : Year
Month
Day
Exec
Quit

FIG. 71

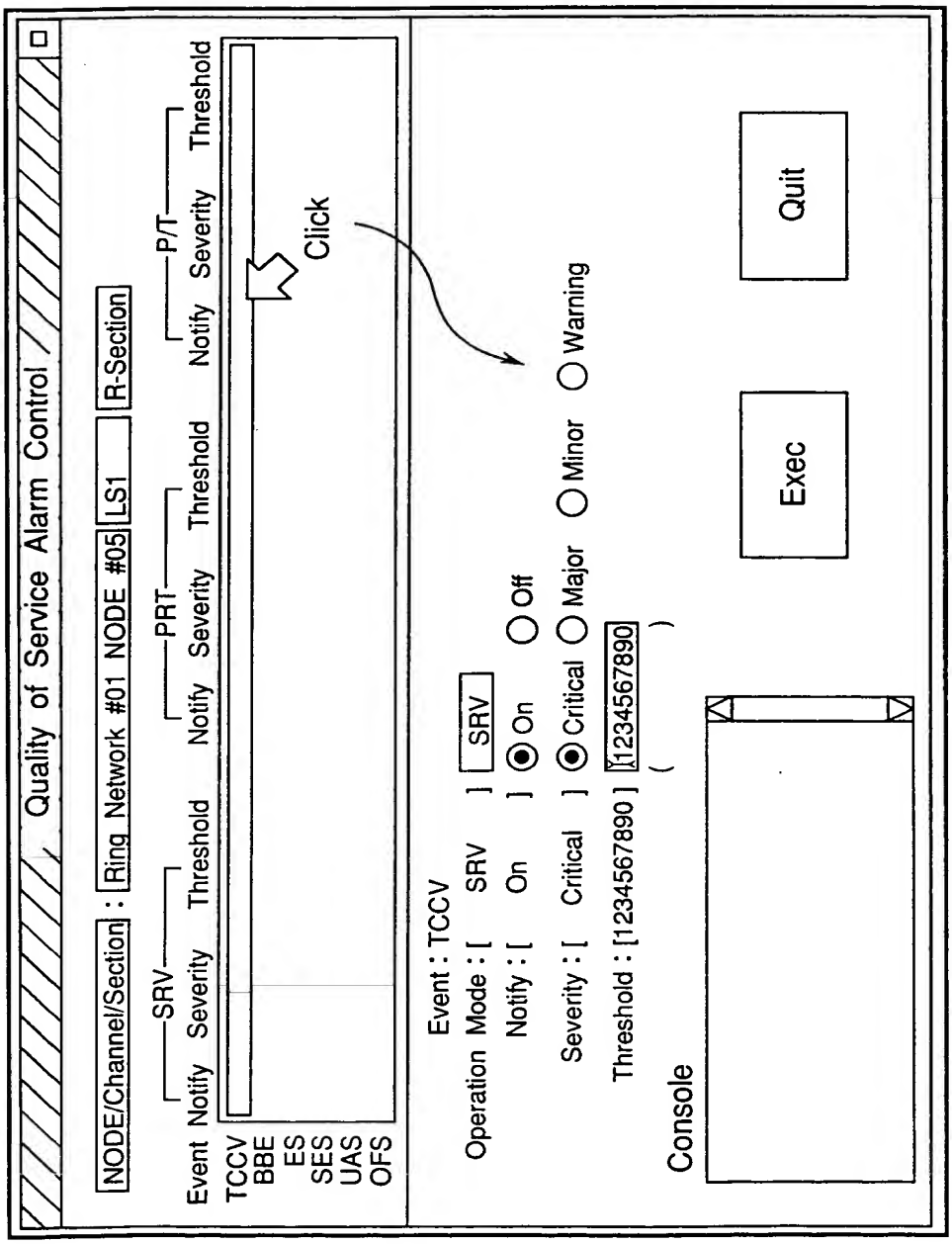
Quality of Service Alarm Control
NODE/Channel/Section : Ring Network #01 NODE #05 LS1 R-Section
SRV
P/T
PRT
Event Notify Severity Threshold Notify Severity Threshold Notify Severity Threshold
TCCV
BBE
ES
SES
UAS
OFS
Click
Event : TCCV
Operation Mode : [SRV] SRV
Notify : [On] On Off
Severity : [Critical] Critical Major Minor Warning
Threshold : [1234567890] 1234567890
( )
Console
Exec
Quit

FIG. 72

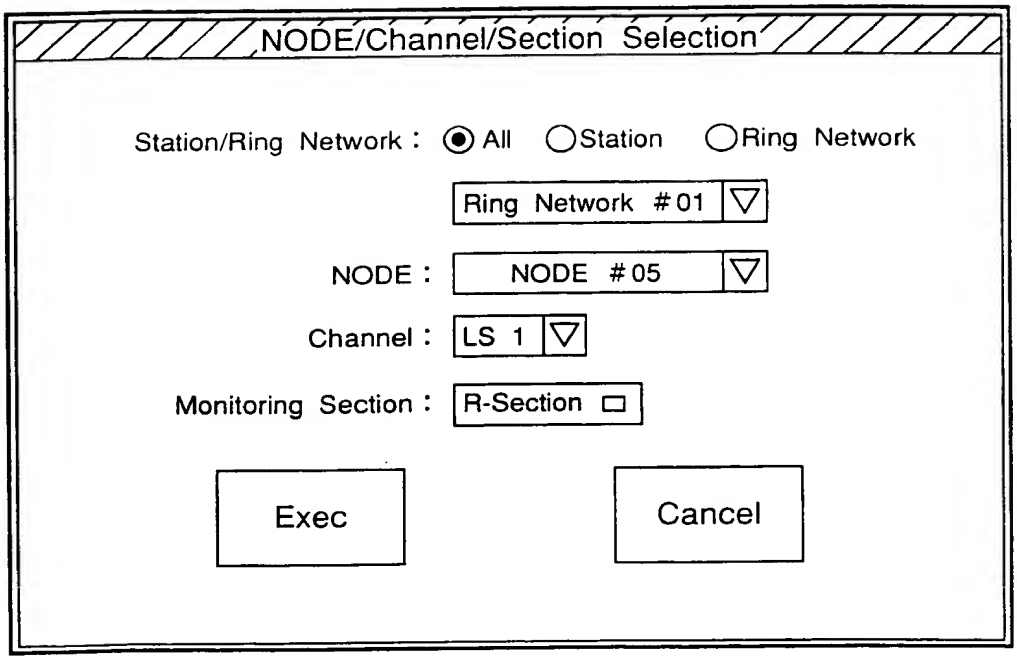
NODE/Channel/Section Selection
Station/Ring Network :
All
Station
Ring Network
Ring Network #01
NODE :
NODE #05
Channel :
LS 1
Monitoring Section :
R-Section
Exec
Cancel

FIG. 73

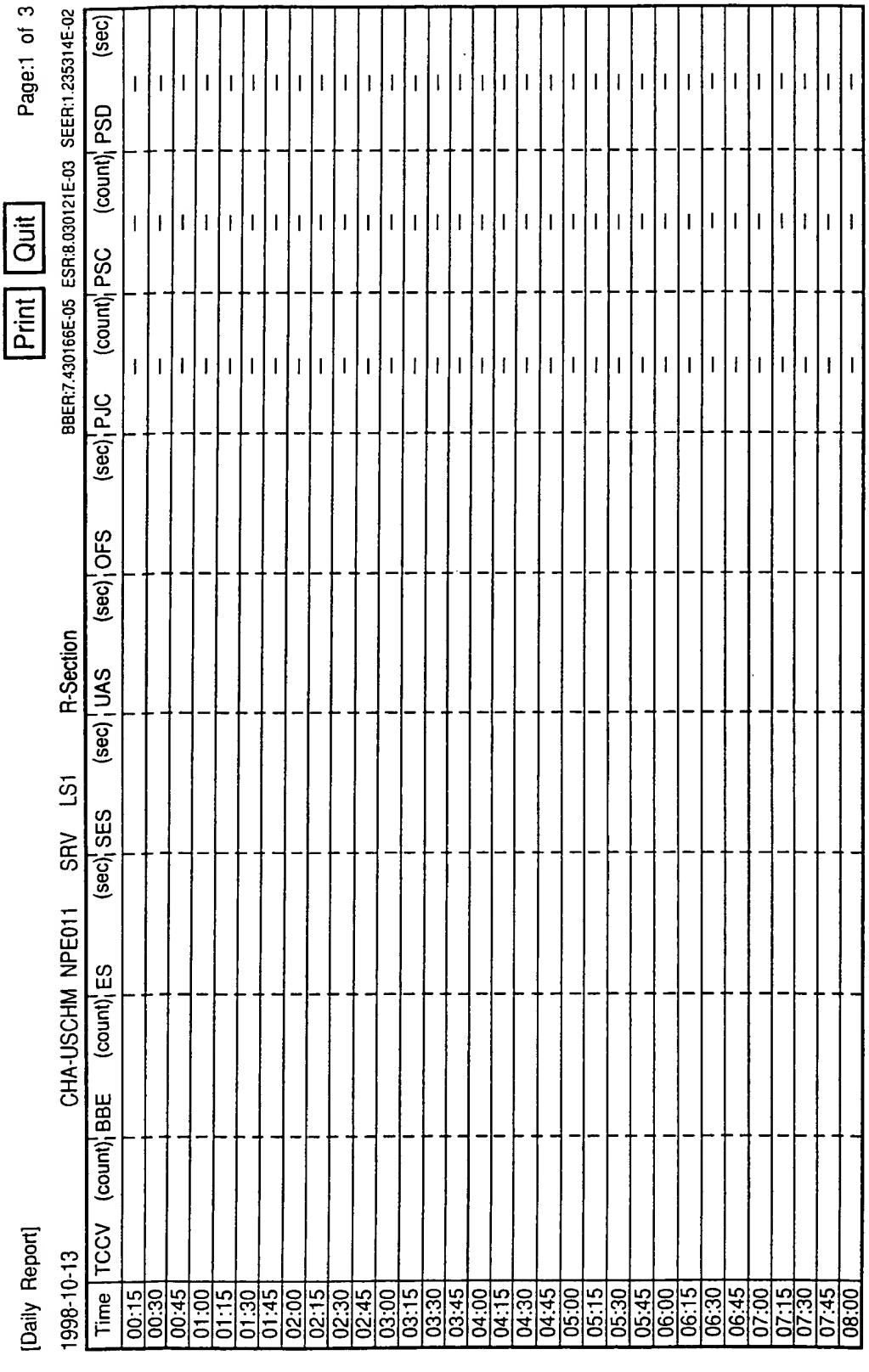
[Daily Report]
1998-10-13 CHA-USCHM NPE011 SRV LS1 R-Section
Print Quit
Page:1 of 3
BBER:7.430166E-05 ESR:8.030121E-03 SEER:1.235314E-02
Time | TCCV (count) | BBE (count) | ES (sec) | SES (sec) | UAS (sec) | OFS (sec) | PJC (count) | PSC (count) | PSD (sec)
00:15 -- -- --
00:30 -- -- --
00:45 -- -- --
01:00 -- -- --
01:15 -- -- --
01:30 -- -- --
01:45 -- -- --
02:00 -- -- --
02:15 -- -- --
02:30 -- -- --
02:45 -- -- --
03:00 -- -- --
03:15 -- -- --
03:30 -- -- --
03:45 -- -- --
04:00 -- -- --
04:15 -- -- --
04:30 -- -- --
04:45 -- -- --
05:00 -- -- --
05:15 -- -- --
05:30 -- -- --
05:45 -- -- --
06:00 -- -- --
06:15 -- -- --
06:30 -- -- --
06:45 -- -- --
07:00 -- -- --
07:15 -- -- --
07:30 -- -- --
07:45 -- -- --
08:00 -- -- --
◁PREVIOUS NEXT▷

FIG. 74

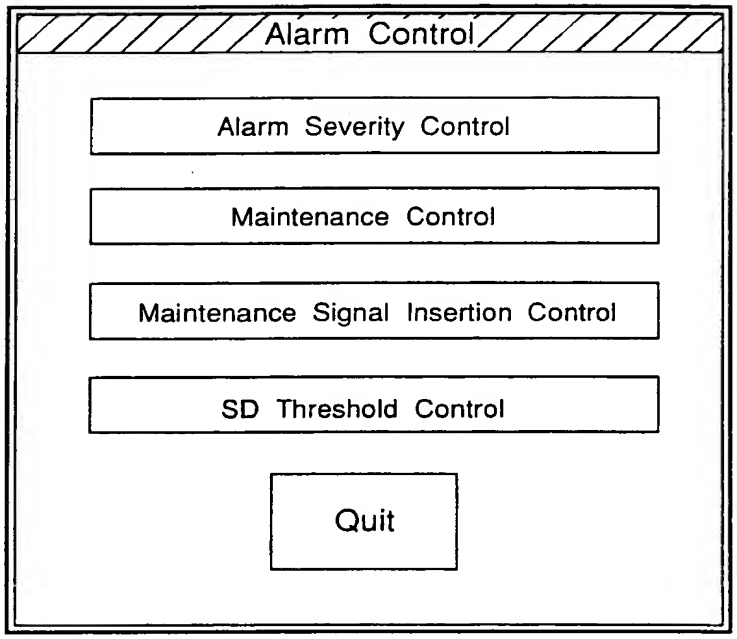
Alarm Control
Alarm Severity Control
Maintenance Control
Maintenance Signal Insertion Control
SD Threshold Control
Quit

FIG. 75

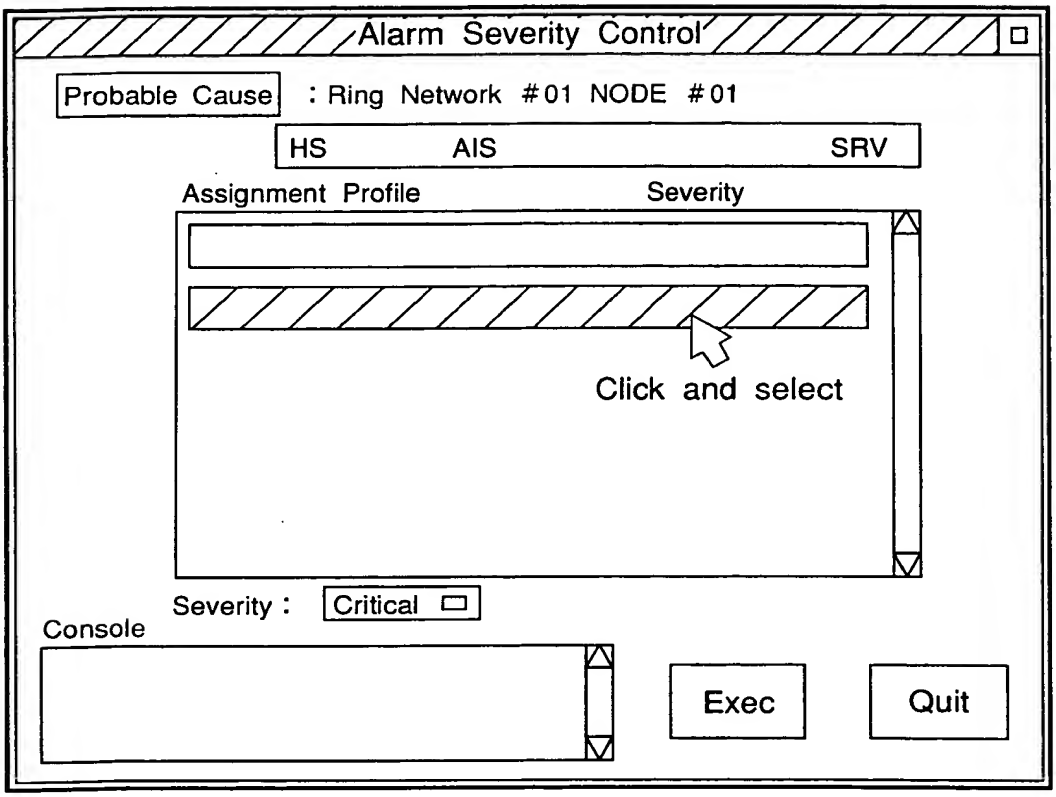
Alarm Severity Control
Probable Cause
: Ring Network #01 NODE #01
HS
AIS
SRV
Assignment Profile
Severity
Click and select
Severity :
Critical
Console
Exec
Quit

FIG. 76

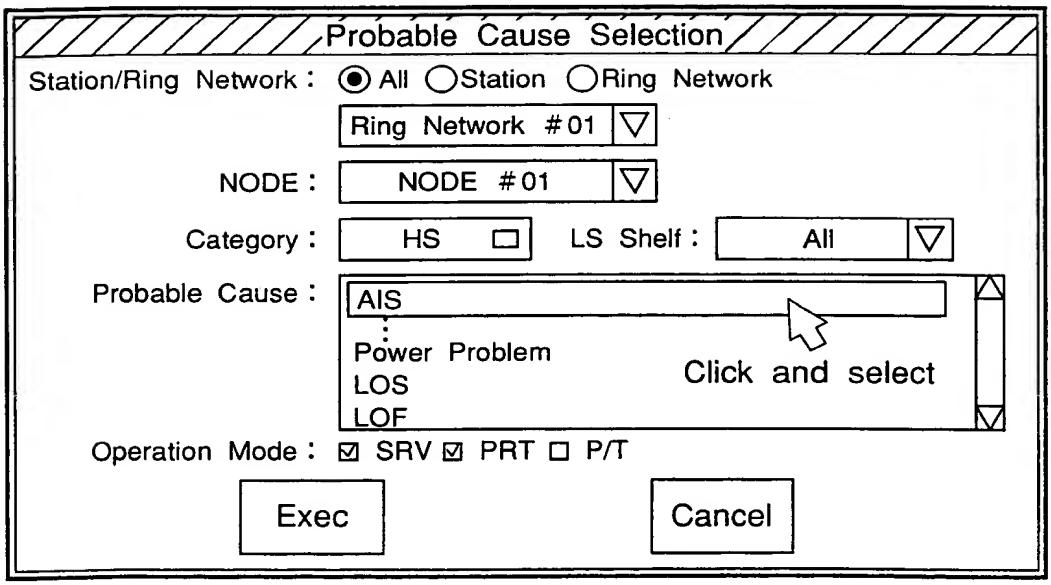
Probable Cause Selection
Station/Ring Network :
All
Station
Ring Network
Ring Network #01
NODE :
NODE #01
Category :
HS
LS Shelf :
All
Probable Cause :
AIS
Power Problem
LOS
LOF
Click and select
Operation Mode :
SRV
PRT
P/T
Exec
Cancel

FIG. 77

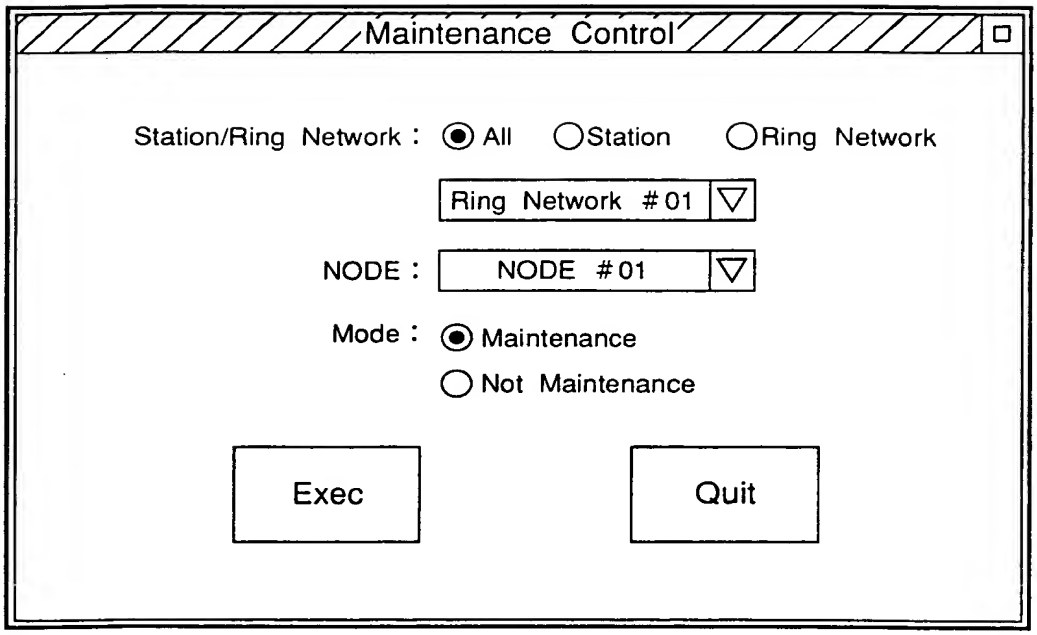
Maintenance Control
Station/Ring Network :
All
Station
Ring Network
Ring Network #01
NODE :
NODE #01
Mode :
Maintenance
Not Maintenance
Exec
Quit

FIG. 78

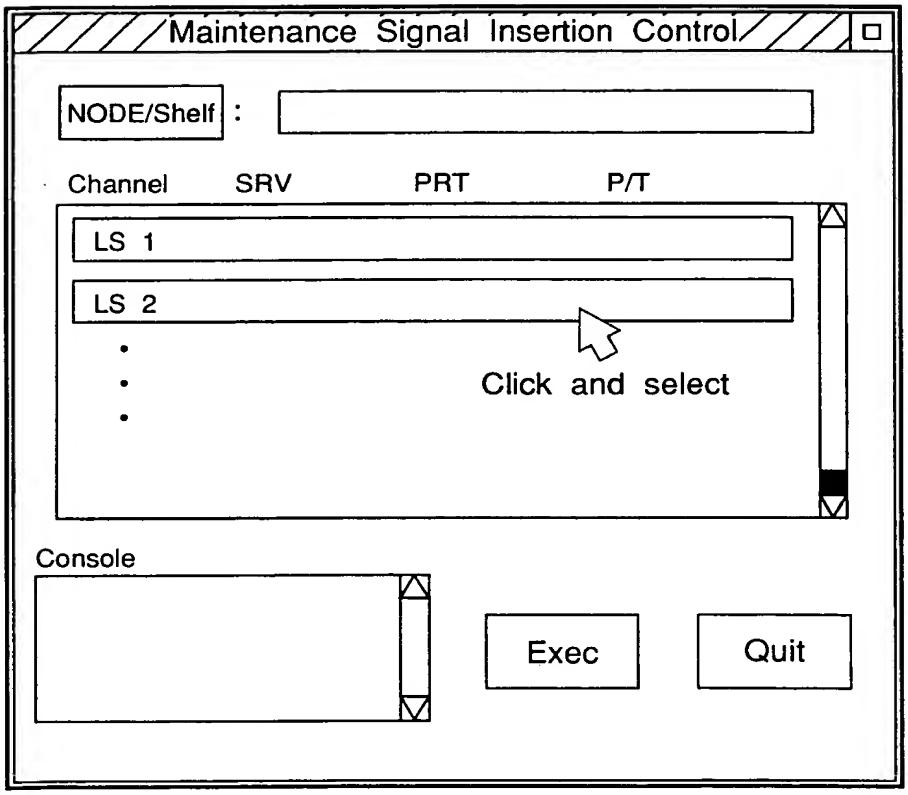
Maintenance Signal Insertion Control
NODE/Shelf :
Channel
SRV
PRT
P/T
LS 1
LS 2
Click and select
Console
Exec
Quit

FIG. 79

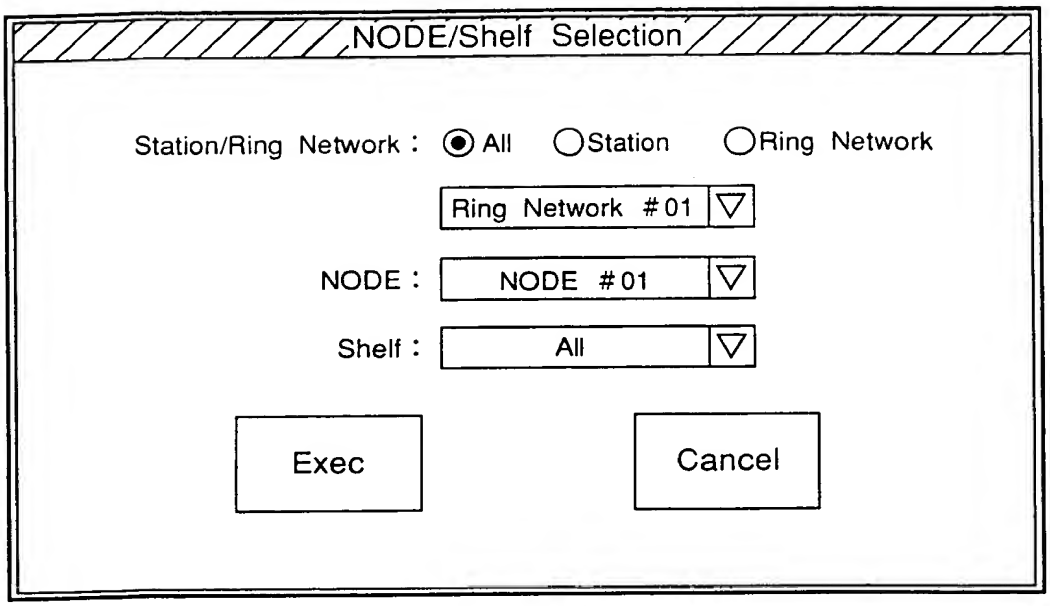
NODE/Shelf Selection
Station/Ring Network : All Station Ring Network
Ring Network #01
NODE :
NODE #01
Shelf :
All
Exec
Cancel

FIG. 80

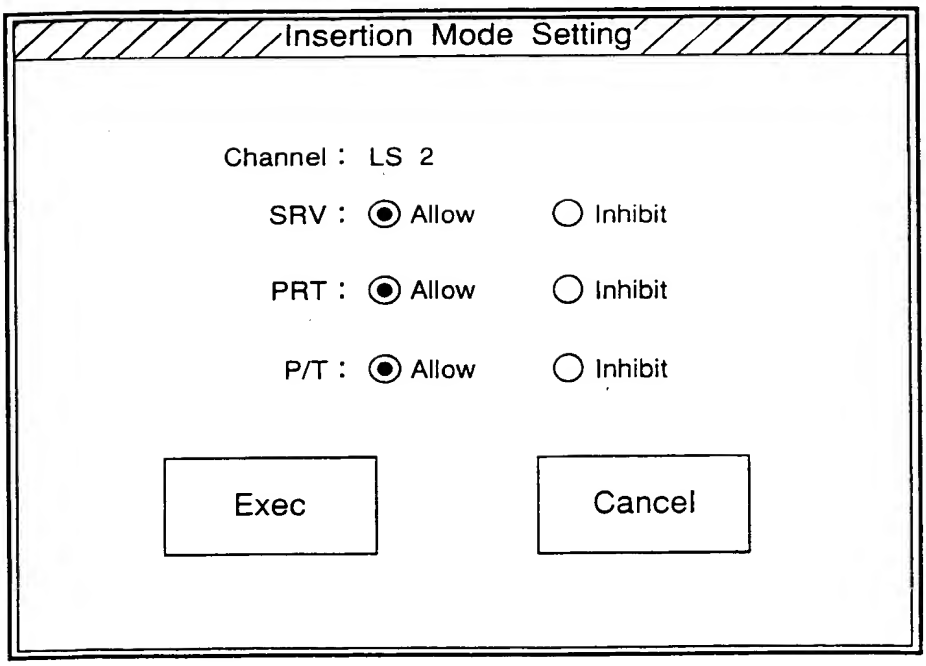
Insertion Mode Setting
Channel : LS 2
SRV : Allow Inhibit
PRT : Allow Inhibit
P/T : Allow Inhibit
Exec
Cancel

FIG. 81

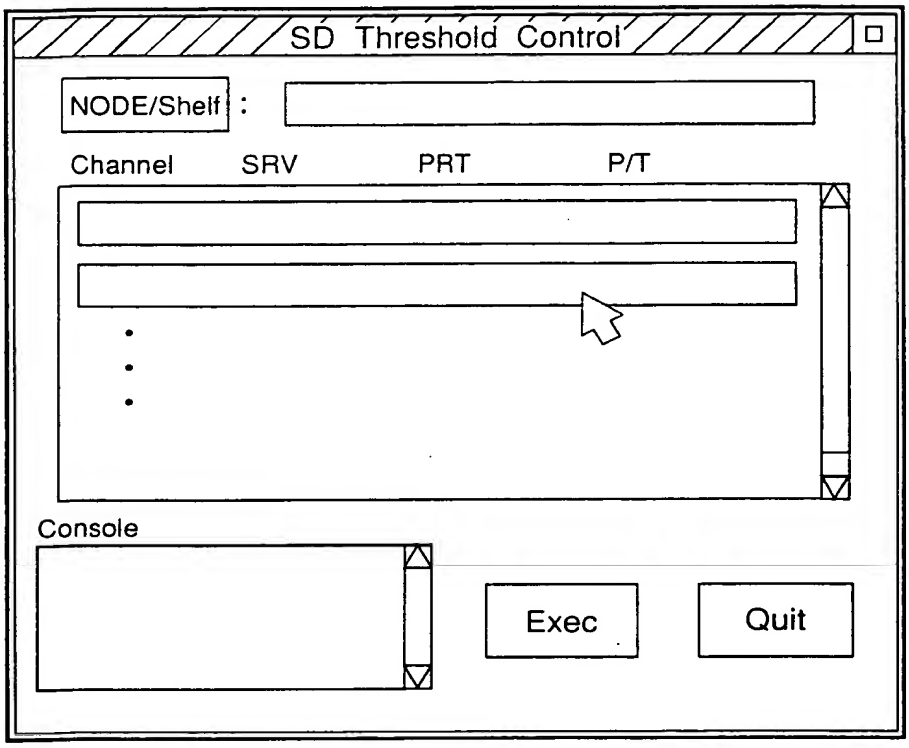
SD Threshold Control
NODE/Shelf :
Channel
SRV
PRT
P/T
Console
Exec
Quit

FIG. 82

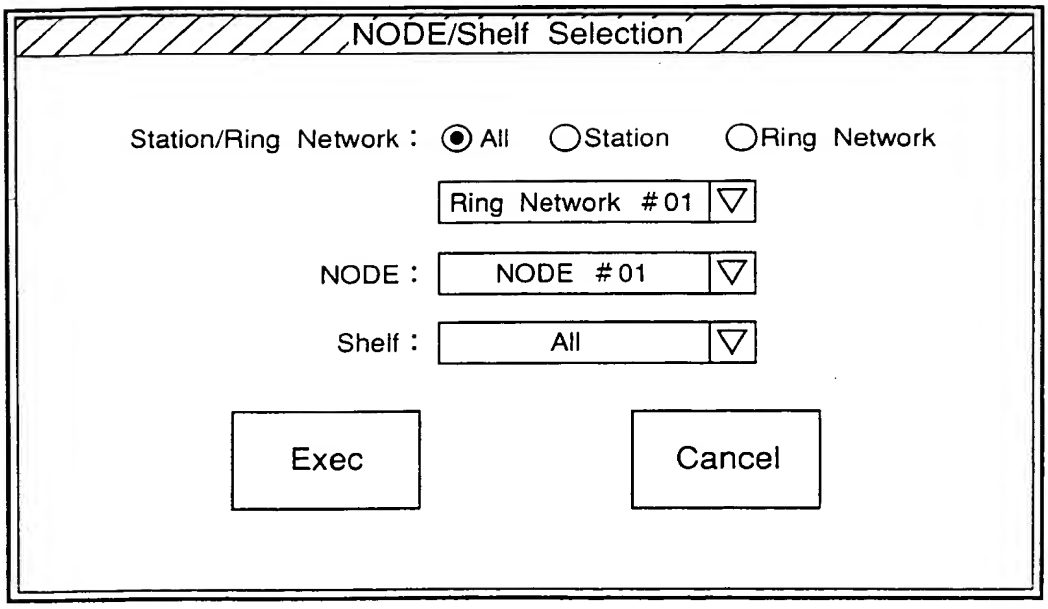
NODE/Shelf Selection
Station/Ring Network :
All
Station
Ring Network
Ring Network #01
NODE :
NODE #01
Shelf :
All
Exec
Cancel

FIG. 83

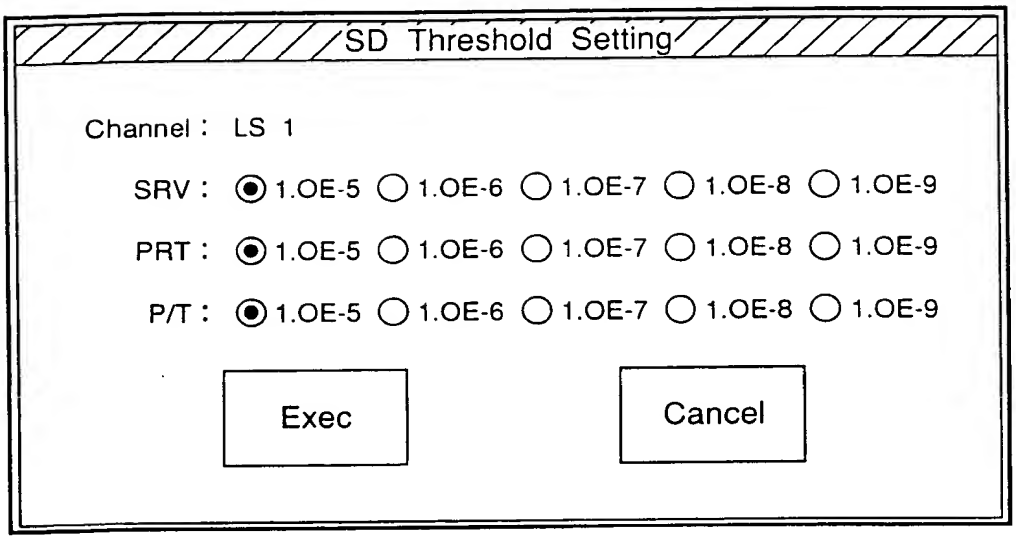
SD Threshold Setting
Channel : LS 1
SRV : 1.OE-5 1.OE-6 1.OE-7 1.OE-8 1.OE-9
PRT : 1.OE-5 1.OE-6 1.OE-7 1.OE-8 1.OE-9
P/T : 1.OE-5 1.OE-6 1.OE-7 1.OE-8 1.OE-9
Exec
Cancel

FIG. 84

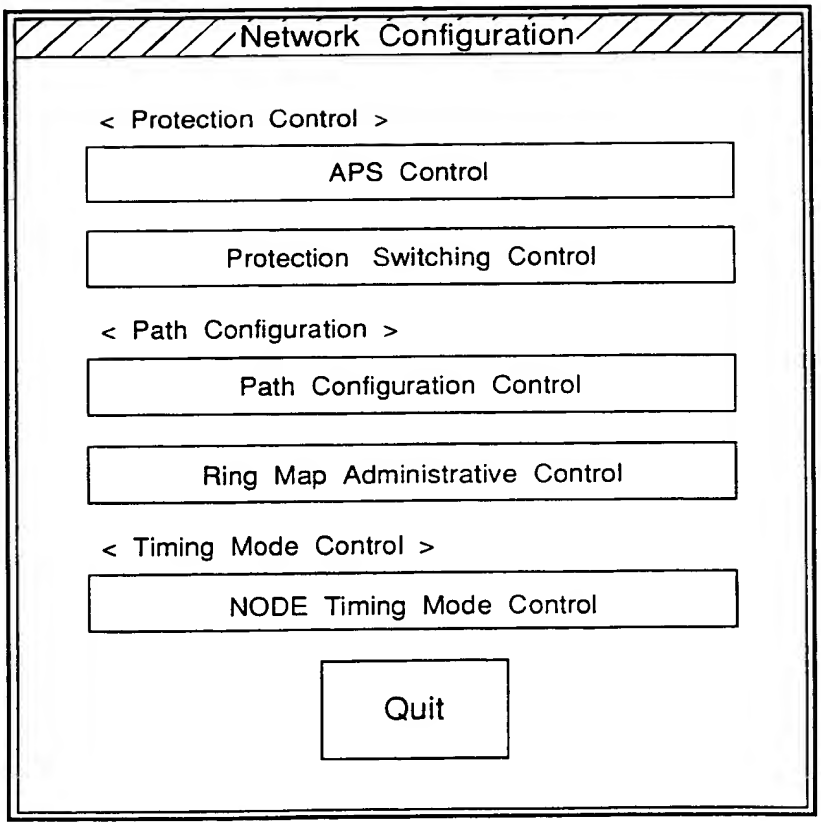
Network Configuration
< Protection Control >
APS Control
Protection Switching Control
< Path Configuration >
Path Configuration Control
Ring Map Administrative Control
< Timing Mode Control >
NODE Timing Mode Control
Quit

FIG. 85

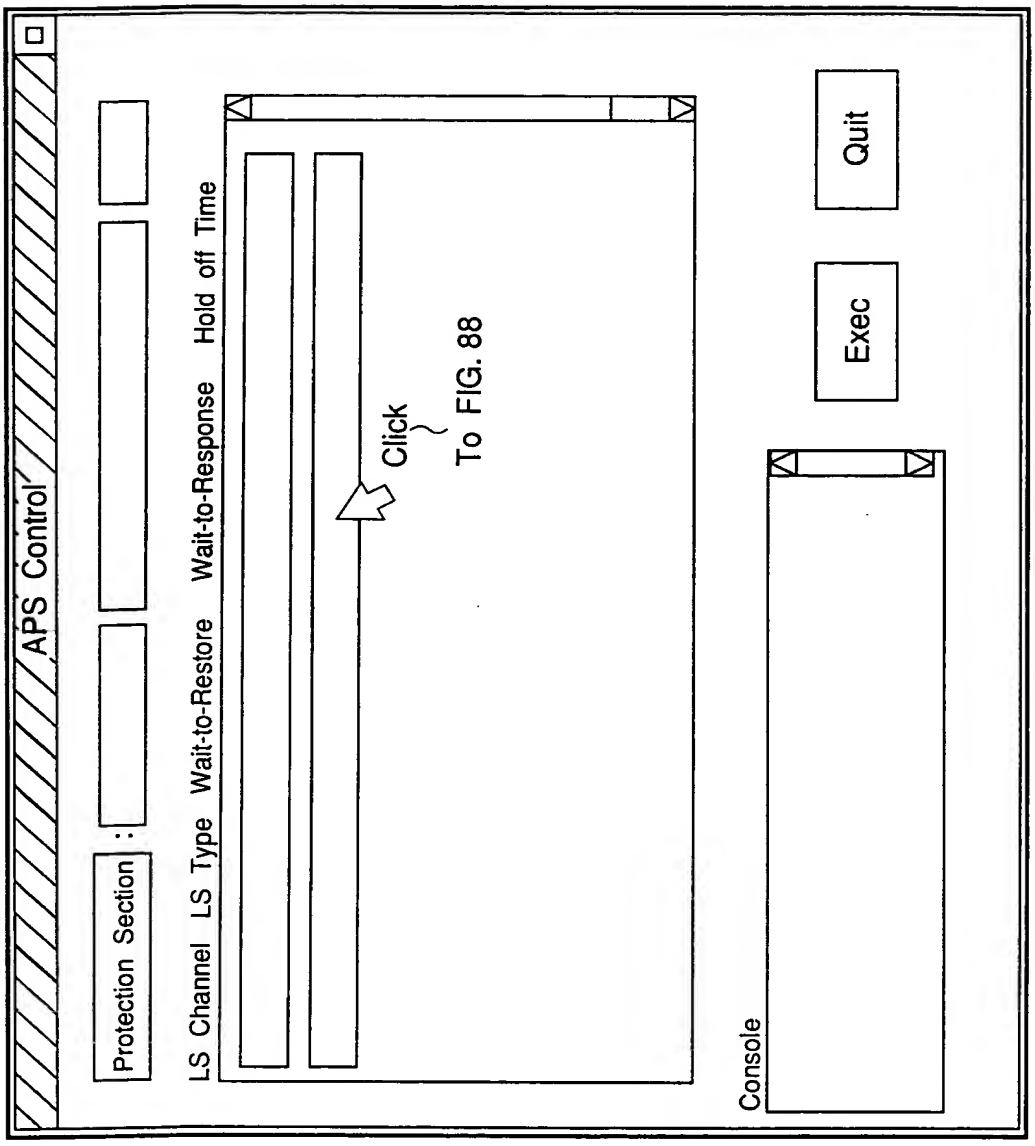
APS Control
Protection Section :
LS Channel LS Type Wait-to-Restore Wait-to-Response Hold off Time
Click
To FIG. 88
Quit
Exec
Console

FIG. 86

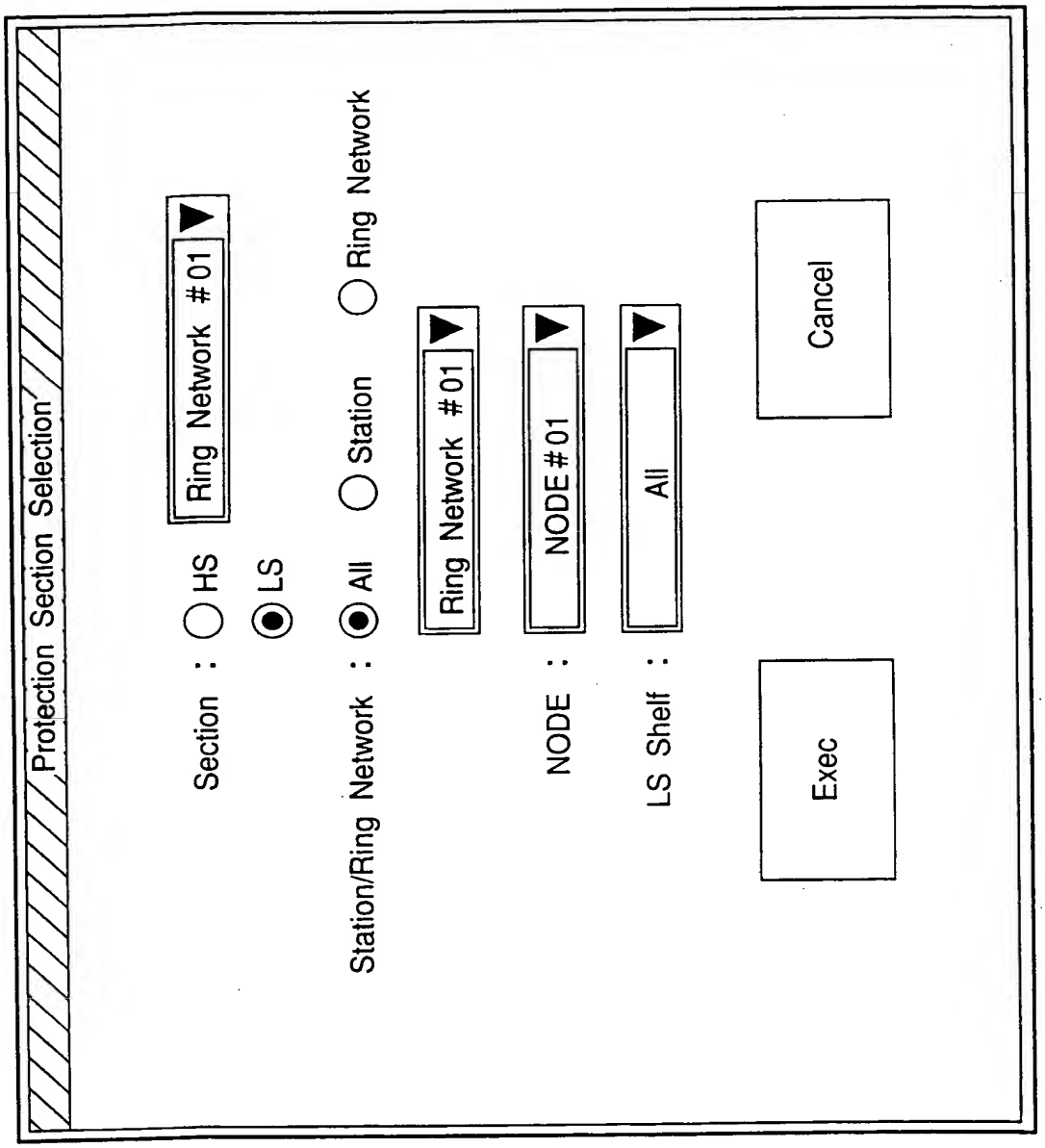
Protection Section Selection
Section : HS
LS
Ring Network #01
Station/Ring Network : All
Station
Ring Network
Ring Network #01
NODE :
NODE #01
LS Shelf :
All
Exec
Cancel

FIG. 87

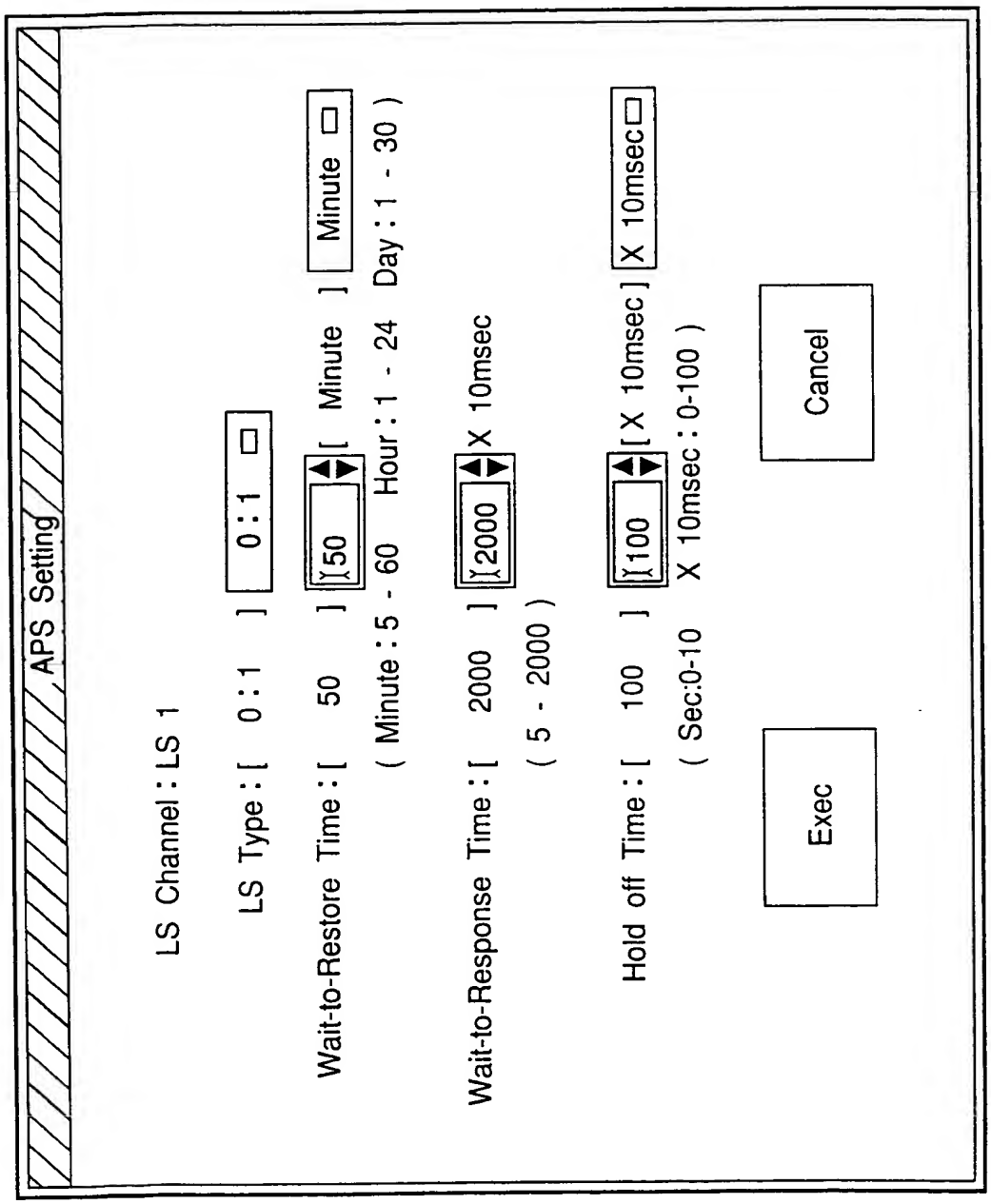
APS Setting
LS Channel : LS 1
LS Type : [0 : 1] 0 : 1
Wait-to-Restore Time : [50] 50 [Minute] Minute
(Minute : 5 - 60 Hour : 1 - 24 Day : 1 - 30)
Wait-to-Response Time : [2000] 2000 X 10msec
(5 - 2000)
Hold off Time : [100] 100 [X 10msec] X 10msec
(Sec:0-10 X 10msec : 0-100)
Exec
Cancel

FIG. 88

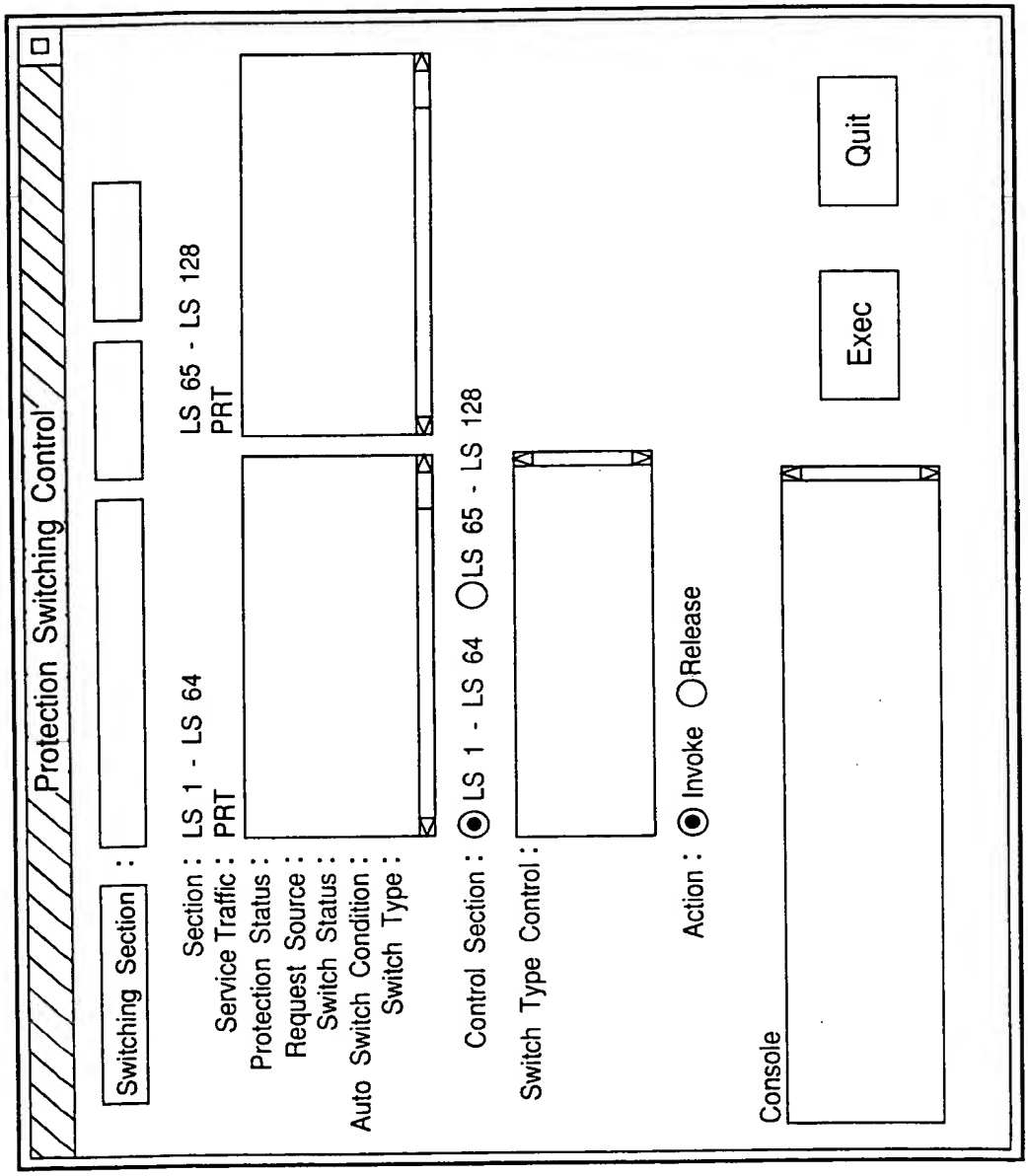
Protection Switching Control
Switching Section :
Section : LS 1 - LS 64
Service Traffic : PRT
Protection Status :
Request Source :
Switch Status :
Auto Switch Condition :
Switch Type :
LS 65 - LS 128
PRT
Control Section : LS 1 - LS 64 LS 65 - LS 128
Switch Type Control :
Action : Invoke Release
Console
Exec
Quit

FIG. 89

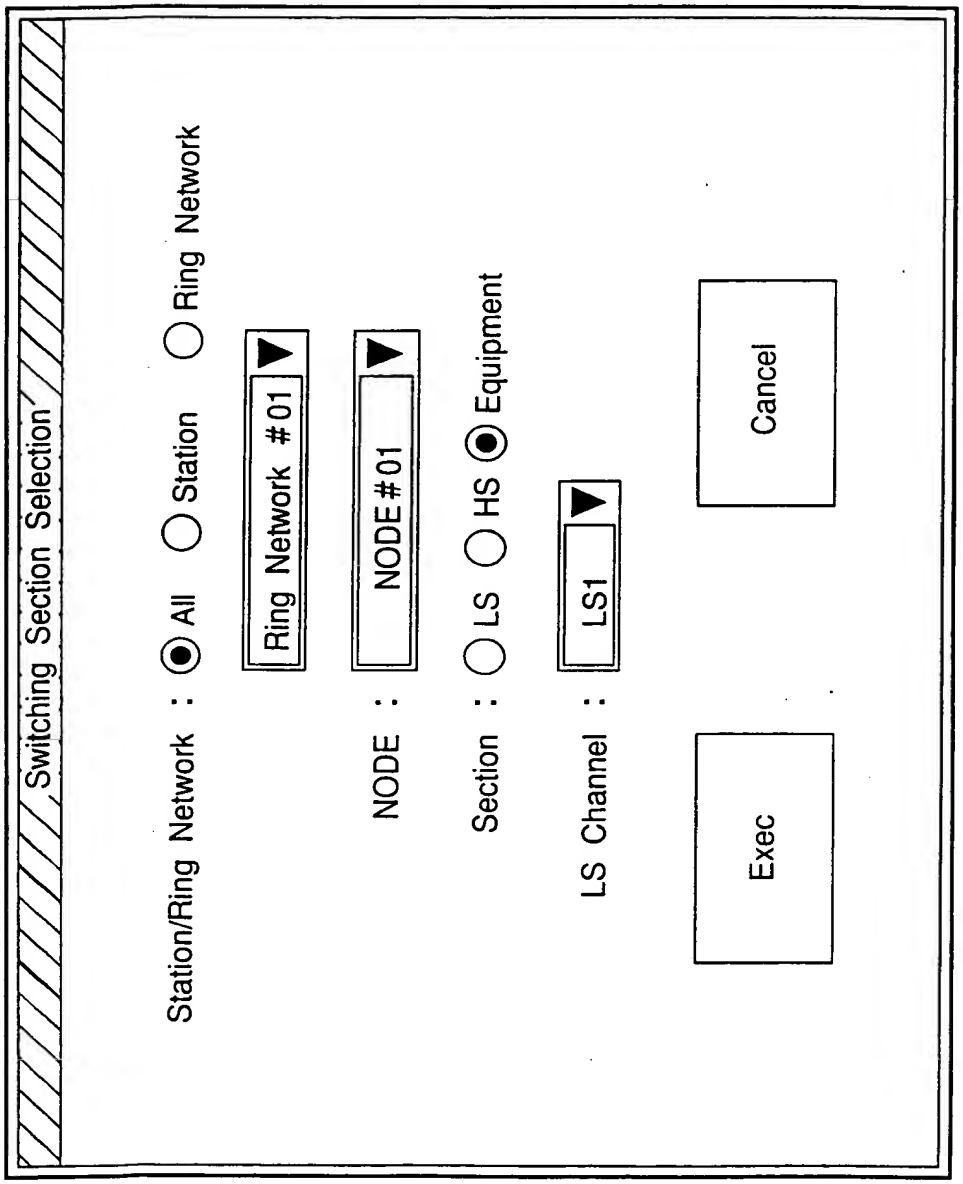
Switching Section Selection
Station/Ring Network : All Station Ring Network
Ring Network #01
NODE :
NODE #01
Section : LS HS Equipment
LS Channel :
LS1
Exec
Cancel

FIG. 90

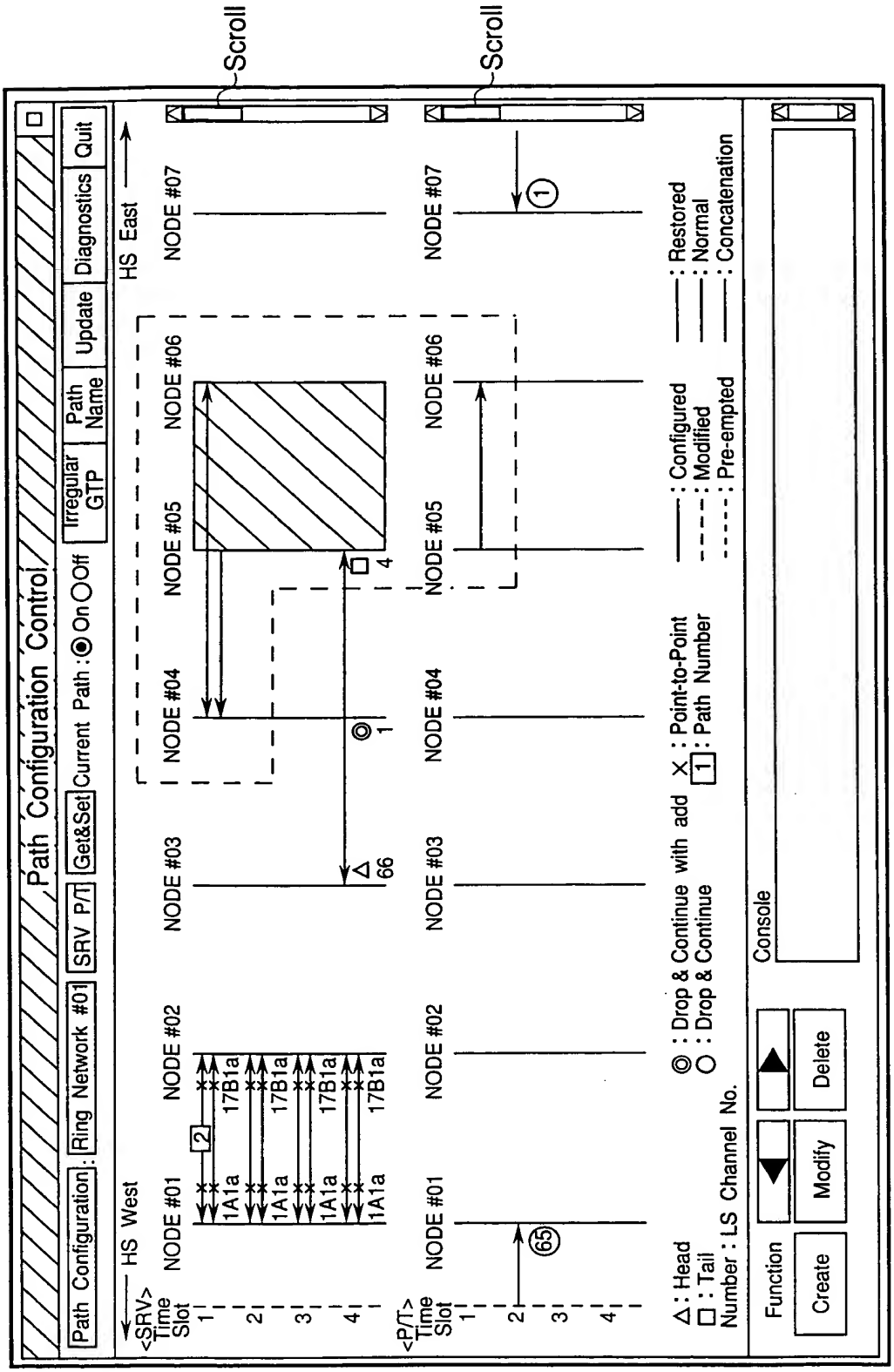
Path Configuration Control
Path Configuration
Ring Network #01
SRV P/T
Get&Set
Current Path : On Off
Irregular GTP
Path Name
Update
Diagnostics
Quit
Scroll
Scroll
HS West
HS East
<SRV> Time Slot
<P/T> Time Slot
NODE #01
NODE #02
NODE #03
NODE #04
NODE #05
NODE #06
NODE #07
1A1a
17B1a
: Configured
: Modified
: Pre-empted
: Restored
: Normal
: Concatenation
: Point-to-Point
: Path Number
: Drop & Continue with add
: Drop & Continue
: Head
: Tail
Number : LS Channel No.
Function
Create
Modify
Delete
Console

FIG. 91

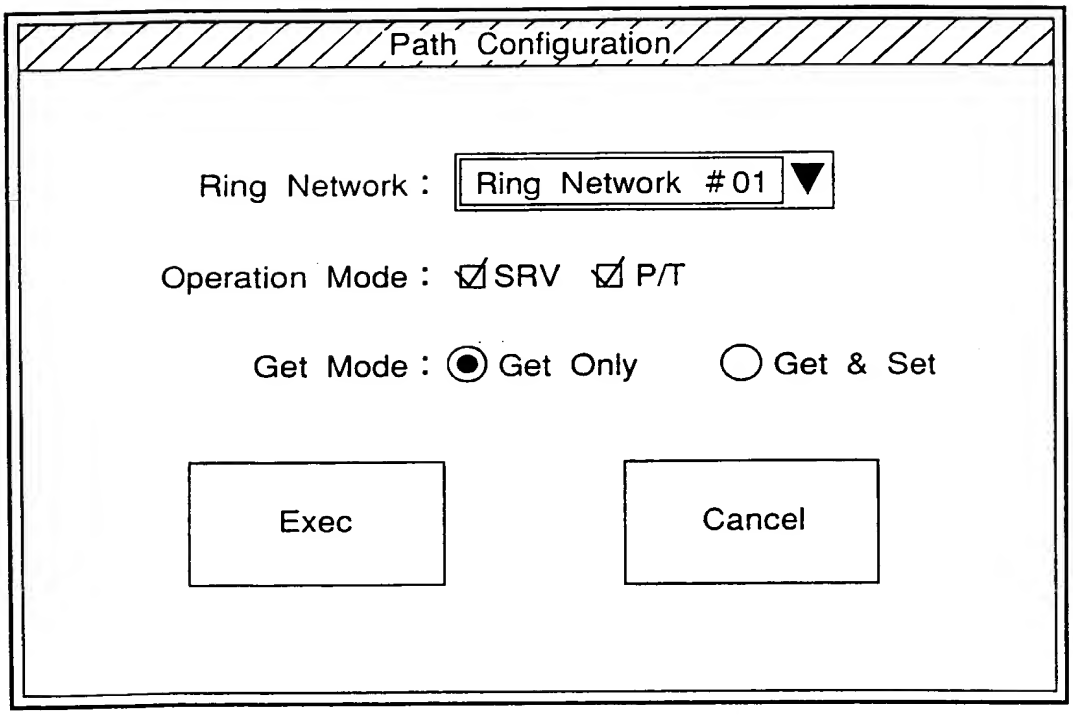
Path Configuration
Ring Network :
Ring Network #01
Operation Mode :
SRV
P/T
Get Mode :
Get Only
Get & Set
Exec
Cancel

FIG. 92

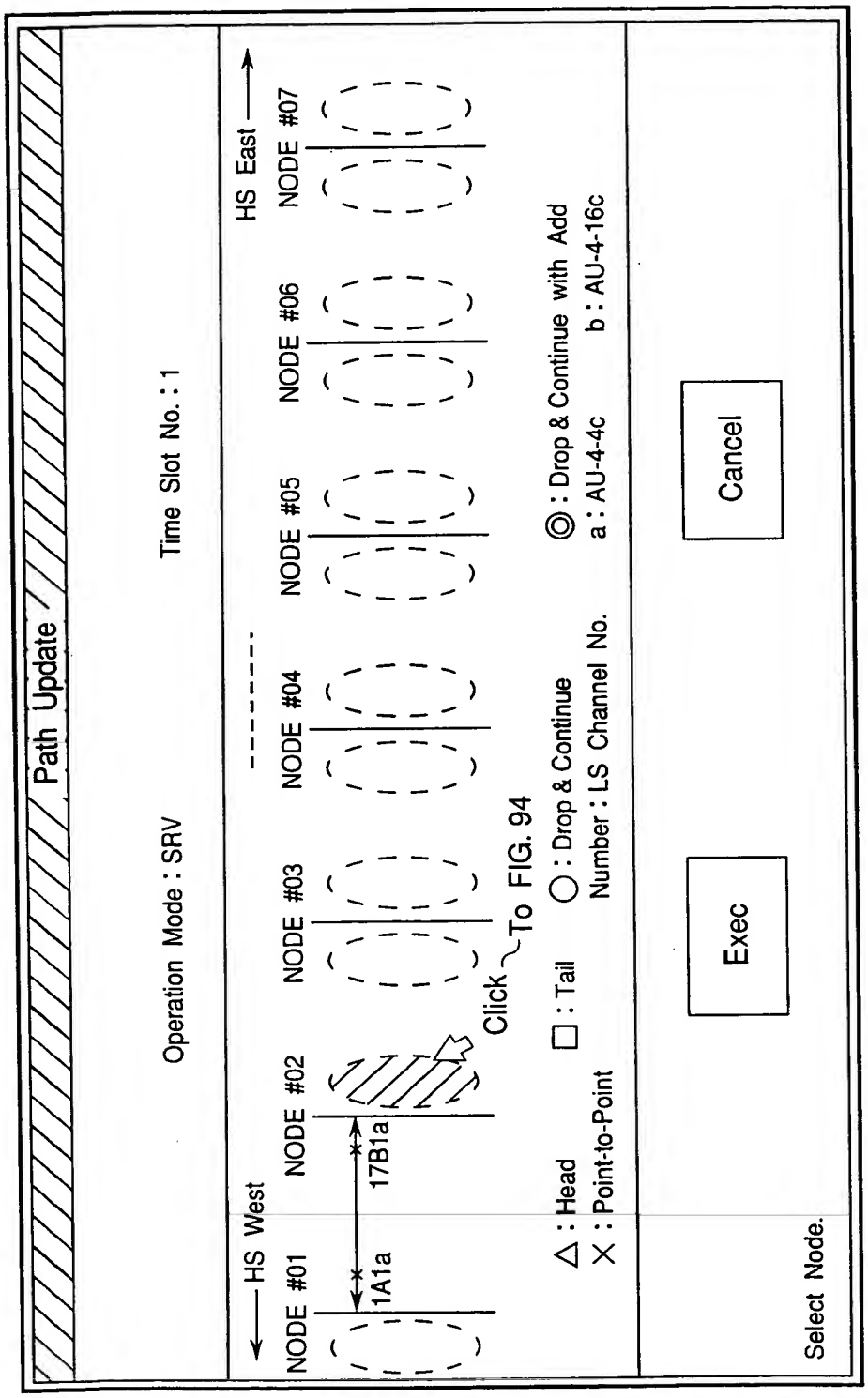
Path Update
Operation Mode : SRV
Time Slot No. : 1
HS East
HS West
NODE #01
NODE #02
NODE #03
NODE #04
NODE #05
NODE #06
NODE #07
1A1a
17B1a
Click
To FIG. 94
△ : Head
□ : Tail
○ : Drop & Continue
◎ : Drop & Continue with Add
× : Point-to-Point
Number : LS Channel No.
a : AU-4-4c
b : AU-4-16c
Exec
Cancel
Select Node.

FIG. 93

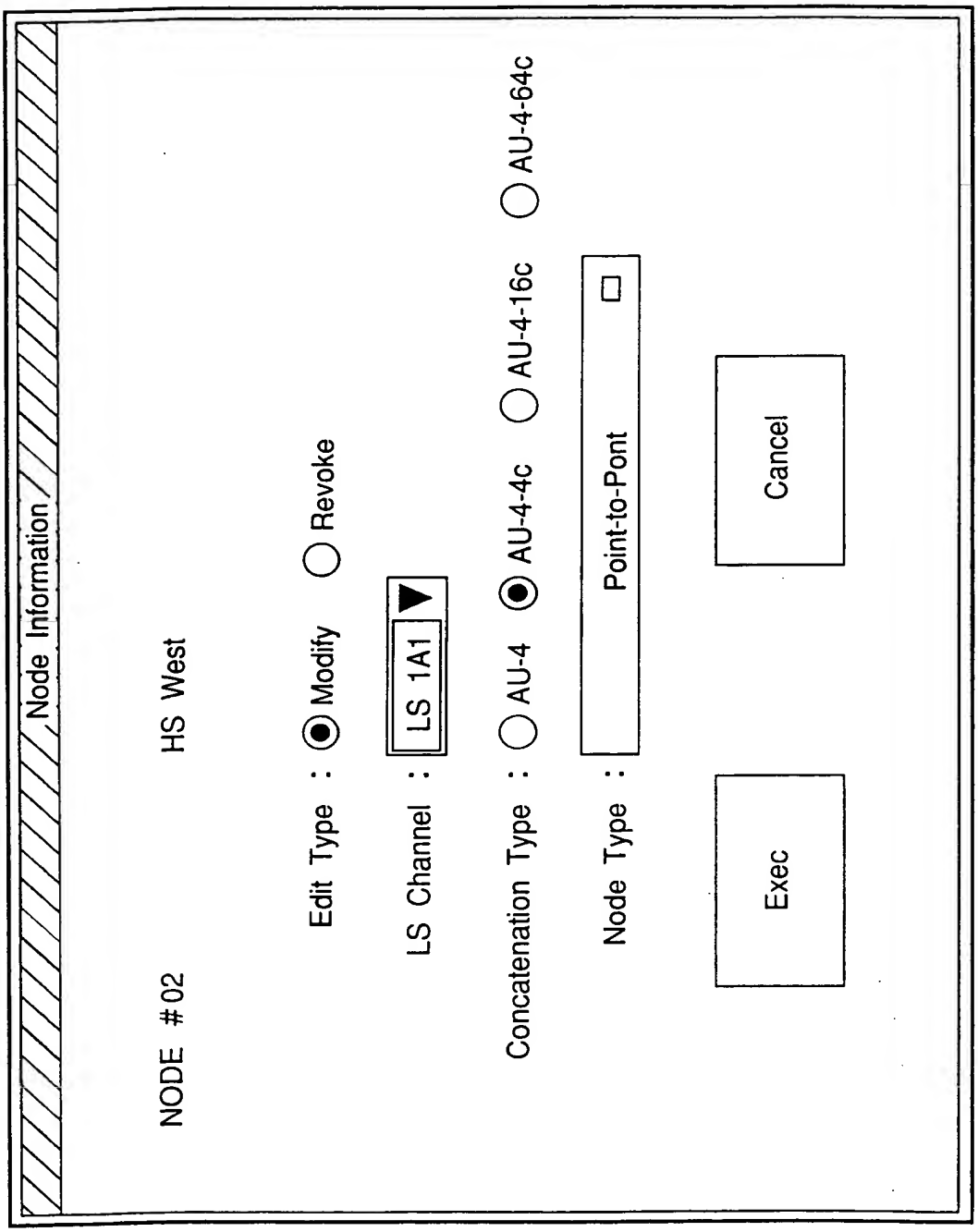
Node Information
NODE # 02
HS West
Edit Type : Modify Revoke
LS Channel : LS 1A1
Concatenation Type : AU-4 AU-4-4c AU-4-16c AU-4-64c
Node Type : Point-to-Pont
Exec
Cancel

FIG. 94

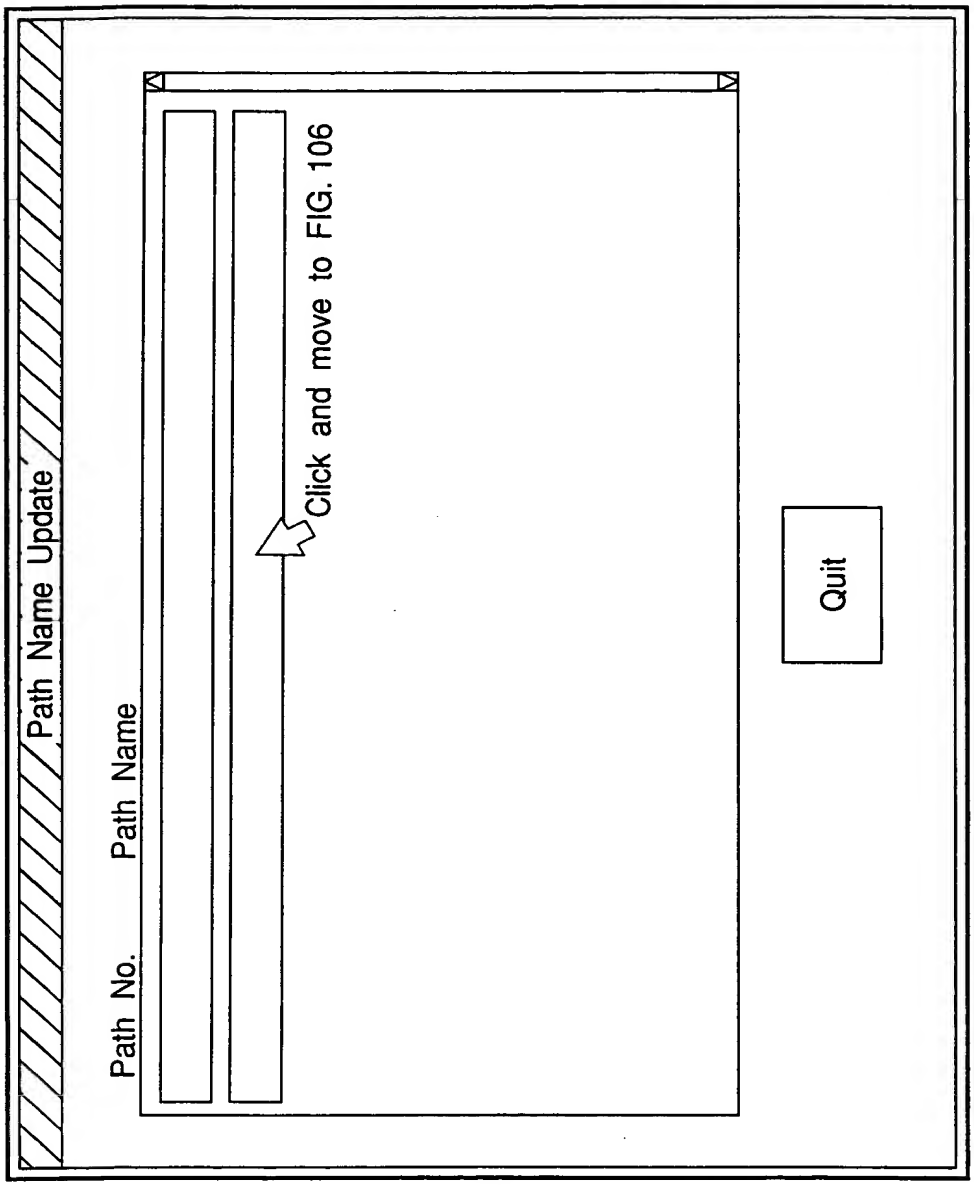
Path Name Update
Path No.
Path Name
Click and move to FIG. 106
Quit

FIG. 95

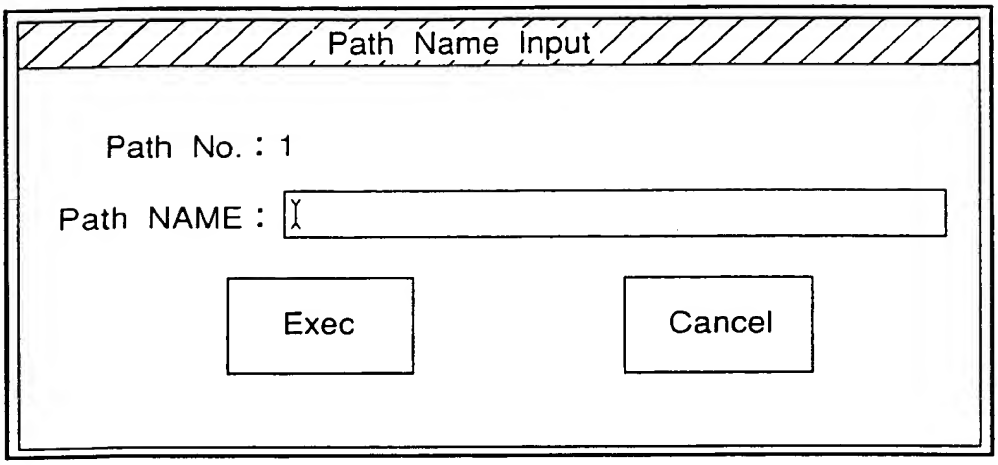
Path Name Input
Path No. : 1
Path NAME :
Exec
Cancel

FIG. 96

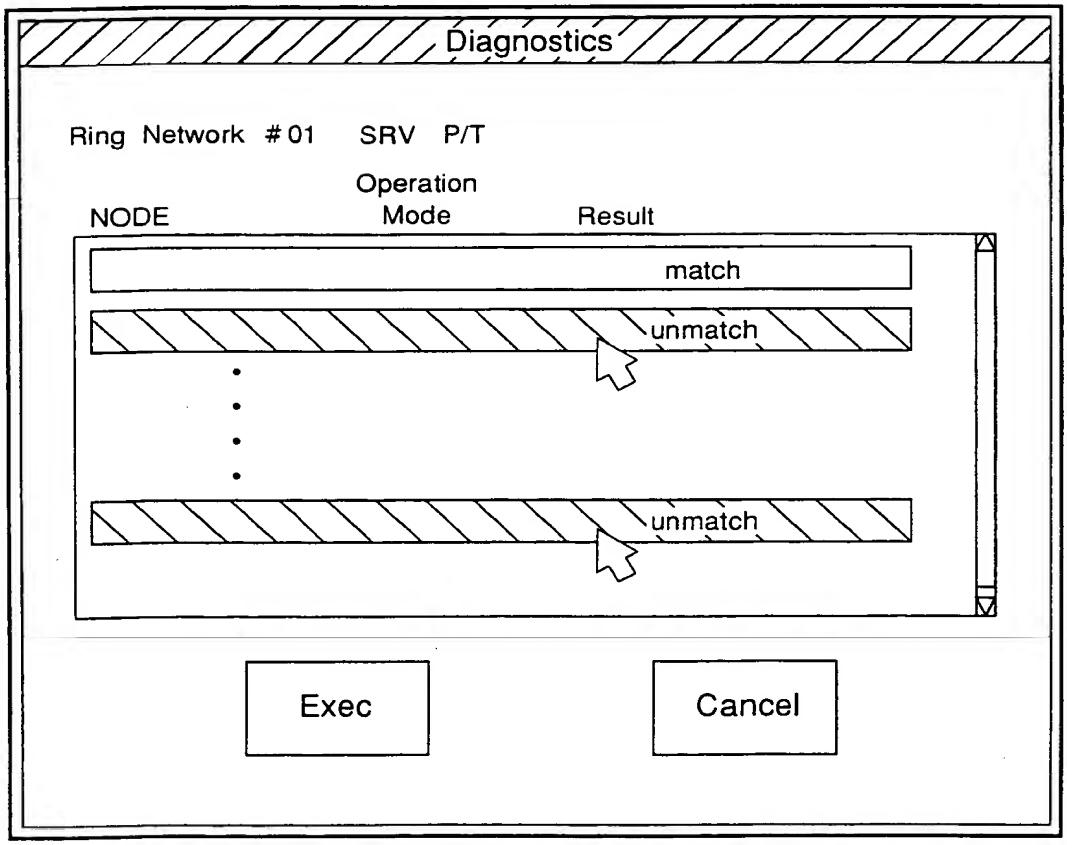
Diagnostics
Ring Network #01 SRV P/T
NODE
Operation Mode
Result
match
unmatch
unmatch
Exec
Cancel

FIG. 97

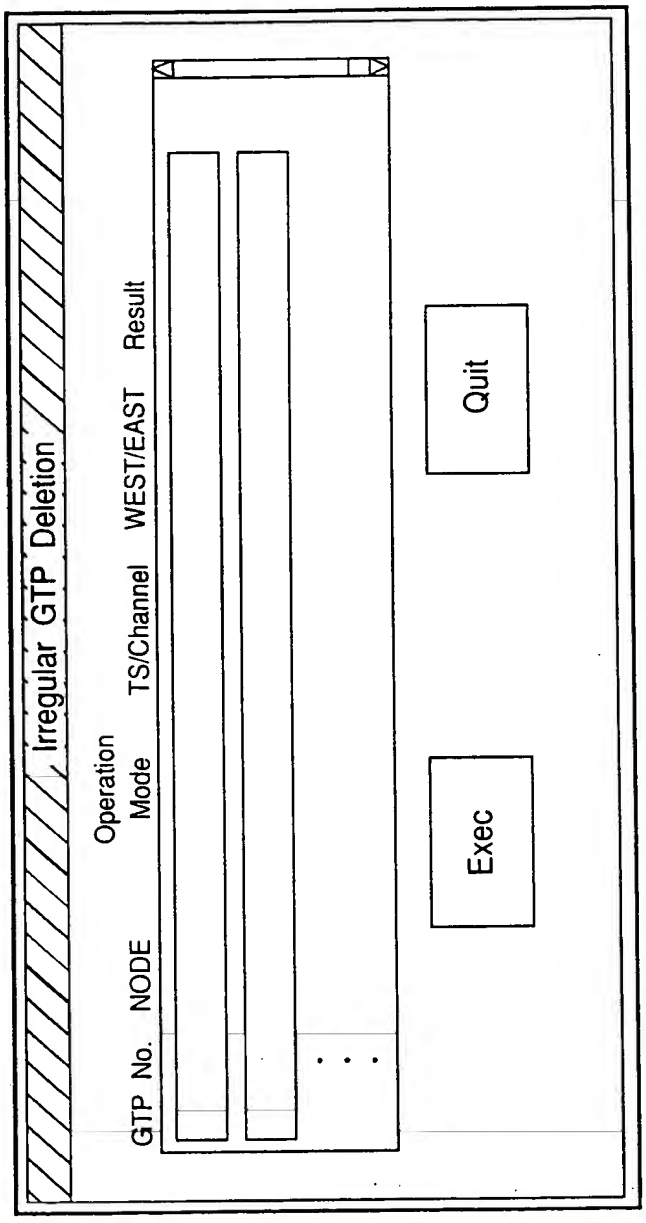
Irregular GTP Deletion
GTP No.
NODE
Operation Mode
TS/Channel
WEST/EAST
Result
Exec
Quit

FIG. 98

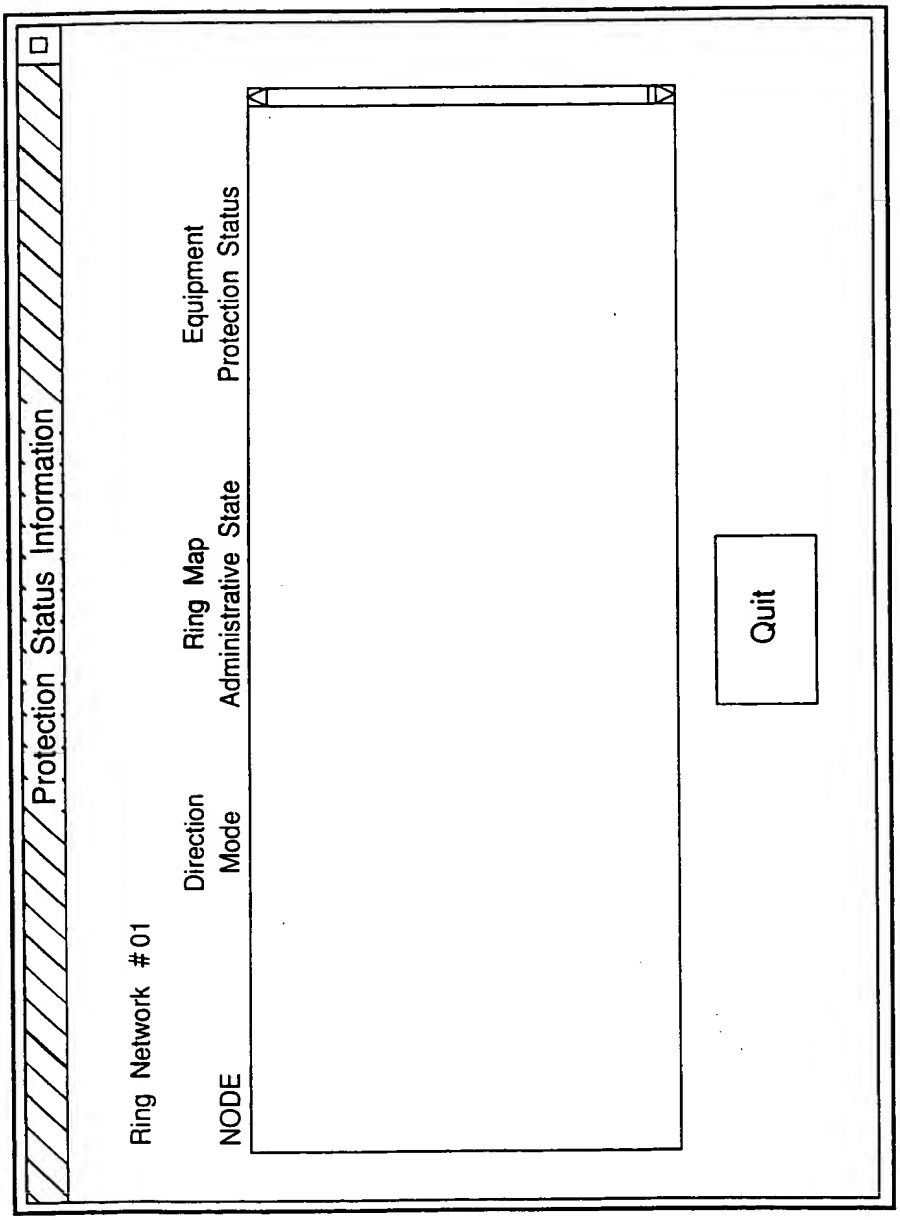
Protection Status Information
Ring Network #01
NODE
Direction
Mode
Ring Map
Administrative State
Equipment
Protection Status
Quit

FIG. 99

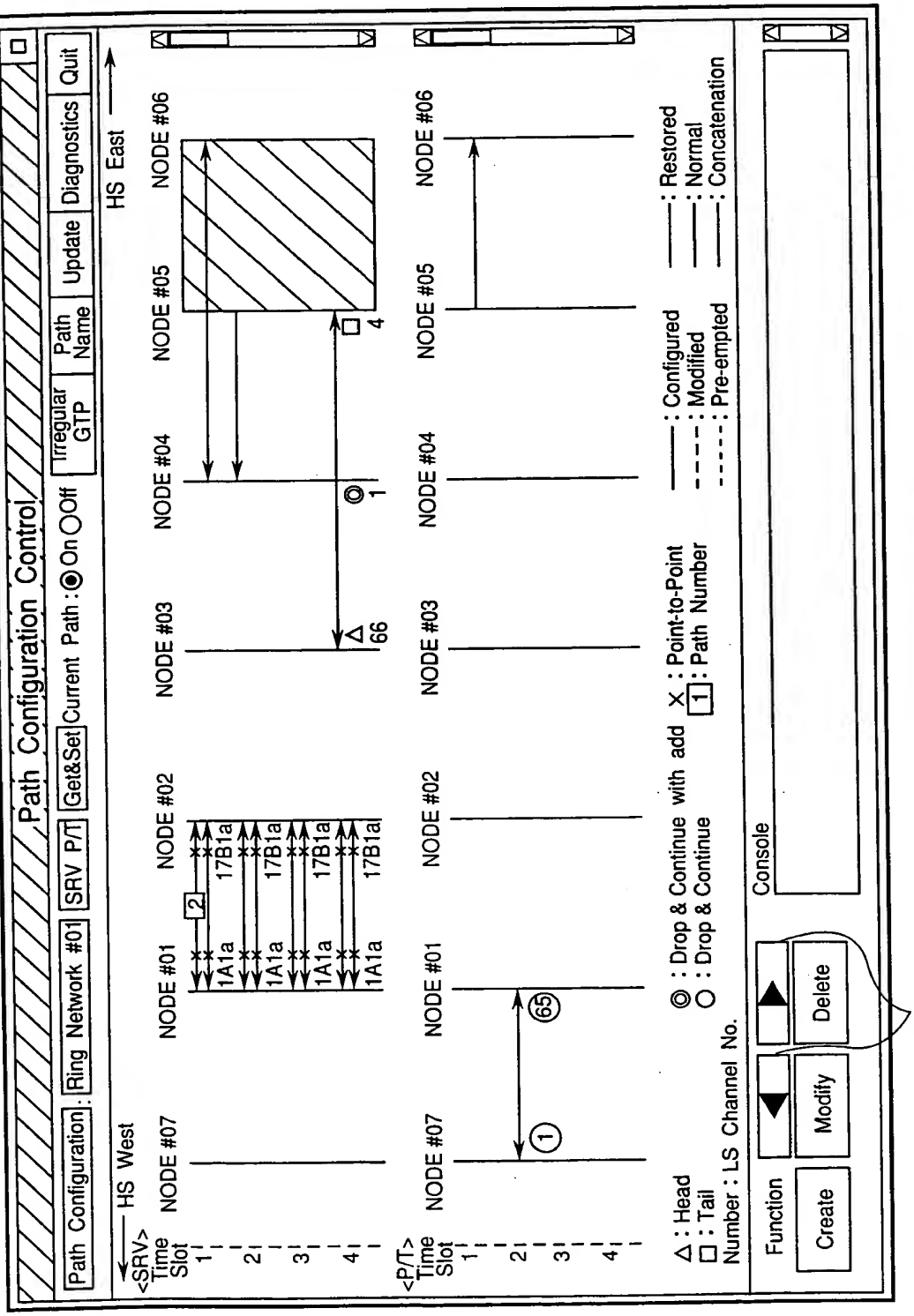
Path Configuration Control
Path Configuration
Ring Network #01
SRV P/T
Get&Set
Current Path : On Off
Irregular GTP
Path Name
Update
Diagnostics
Quit
HS West
HS East
<SRV>
<P/T>
Time Slot
NODE #01
NODE #02
NODE #03
NODE #04
NODE #05
NODE #06
NODE #07
1A1a
17B1a
: Drop & Continue with add
: Drop & Continue
: Point-to-Point
: Path Number
: Configured
: Modified
: Pre-empted
: Restored
: Normal
: Concatenation
: Head
: Tail
Number : LS Channel No.
Console
Function
Create
Modify
Delete
Scroll button

FIG. 100

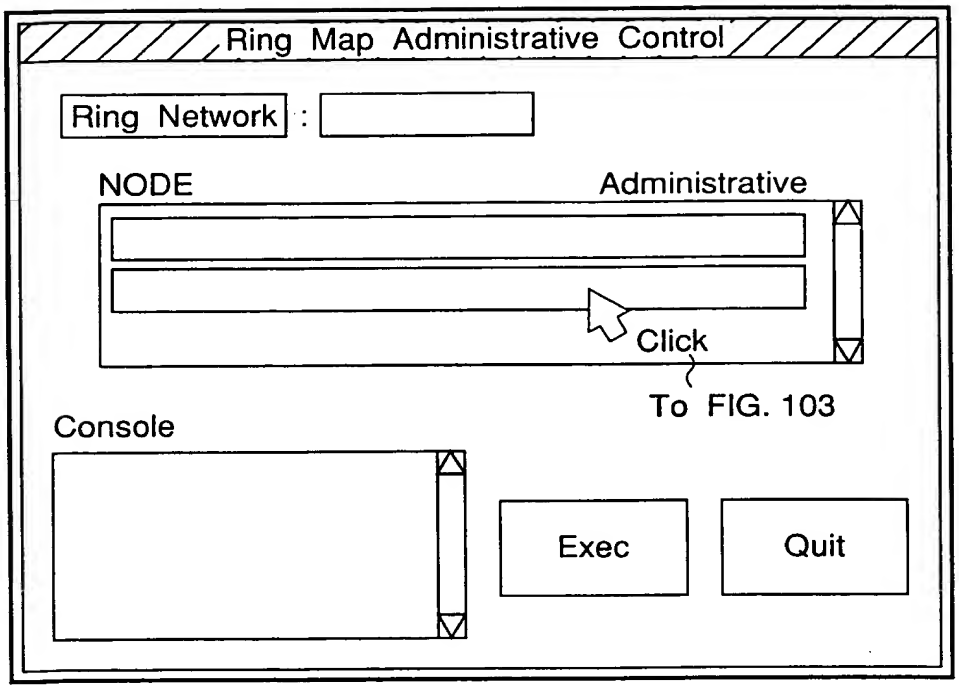
Ring Map Administrative Control
Ring Network :
NODE
Administrative
Click
To FIG. 103
Console
Exec
Quit

FIG. 101

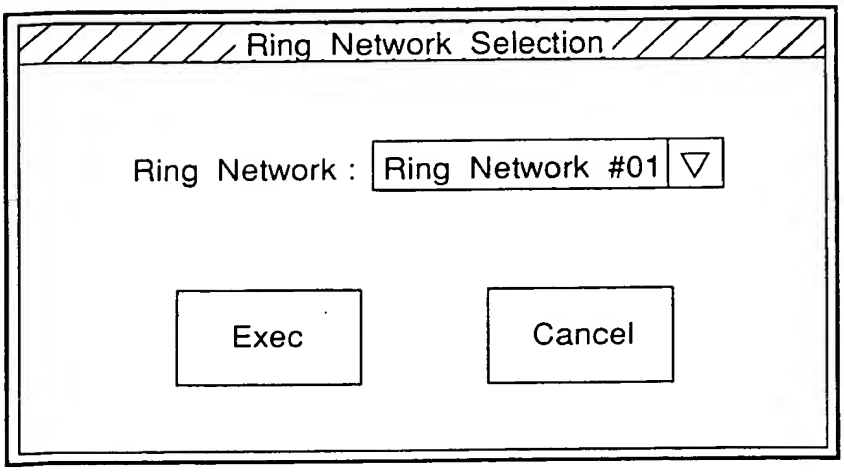

FIG. 102

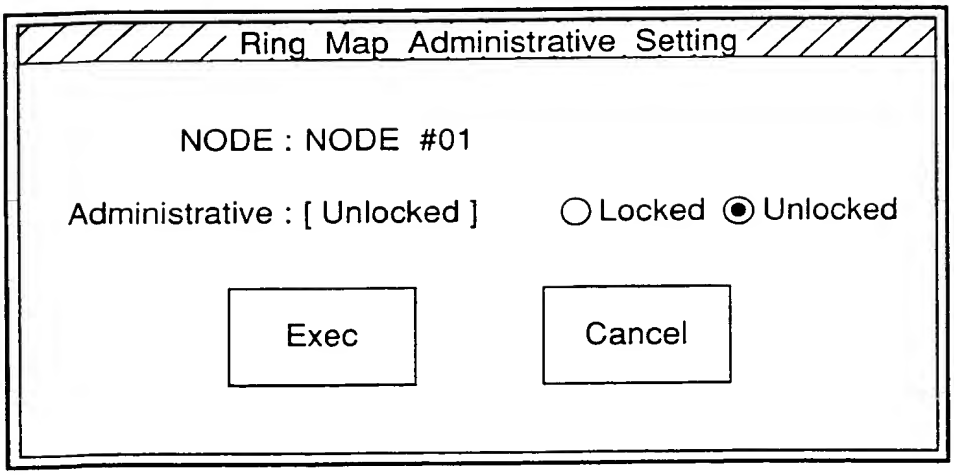

FIG. 103

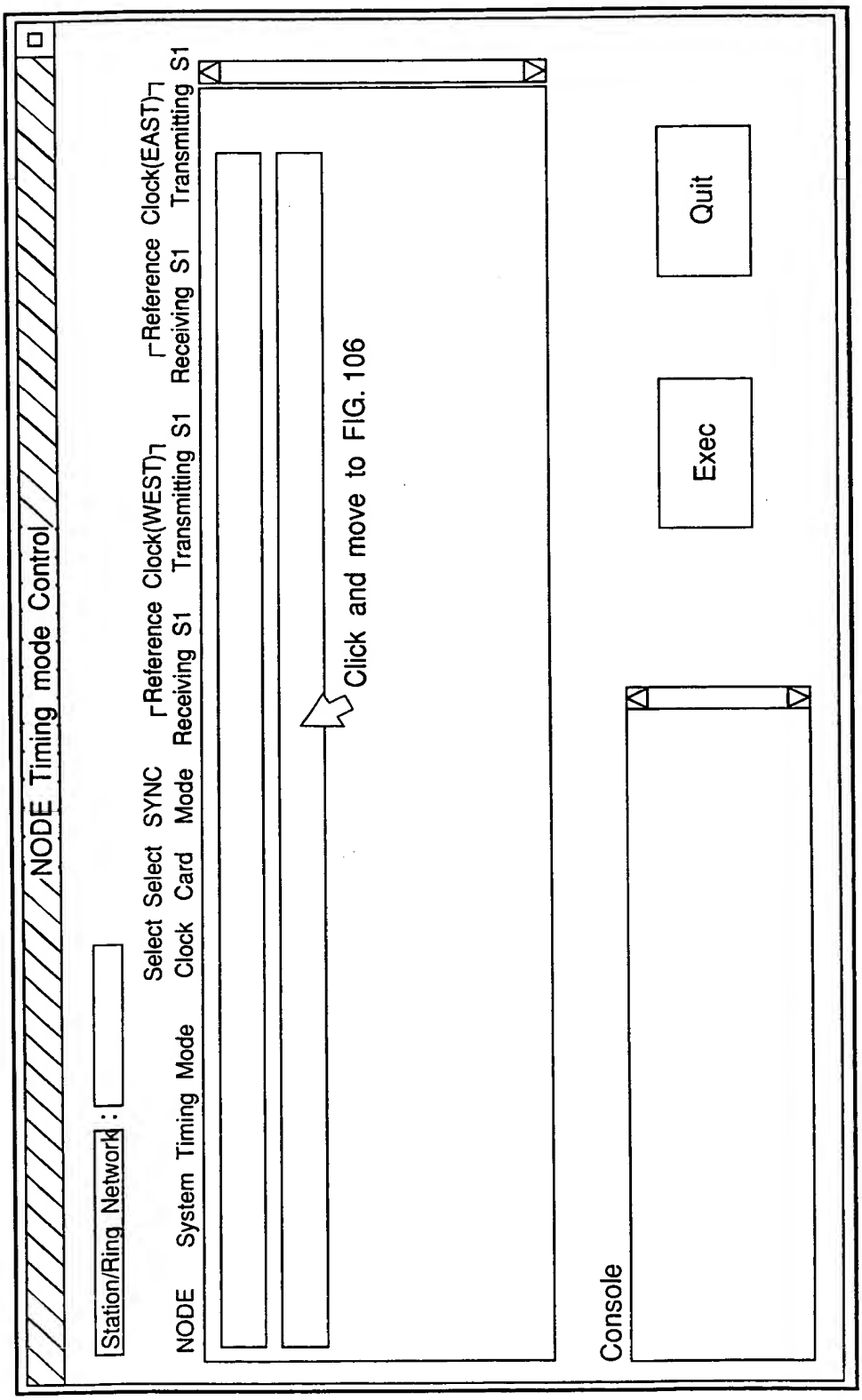
NODE Timing mode Control
Station/Ring Network :
NODE System Timing Mode
Select Clock
Select Card
SYNC Mode
Reference Clock(WEST)
Receiving S1
Transmitting S1
Reference Clock(EAST)
Receiving S1
Transmitting S1
Click and move to FIG. 106
Exec
Quit
Console

FIG. 104

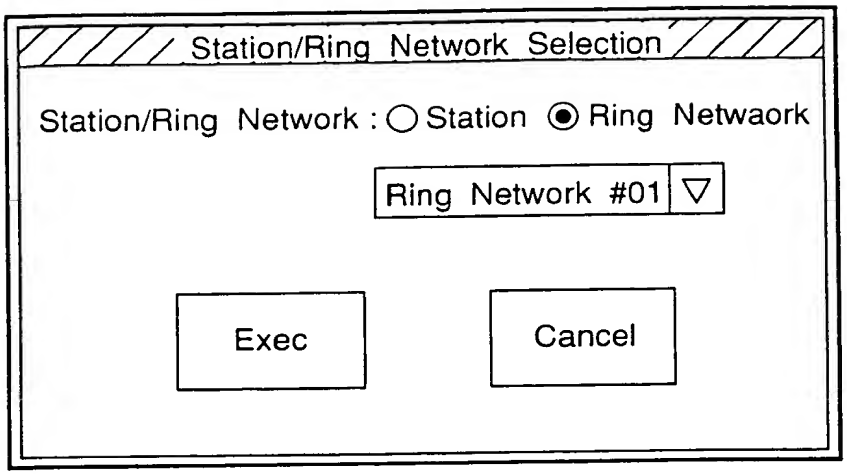

FIG. 105

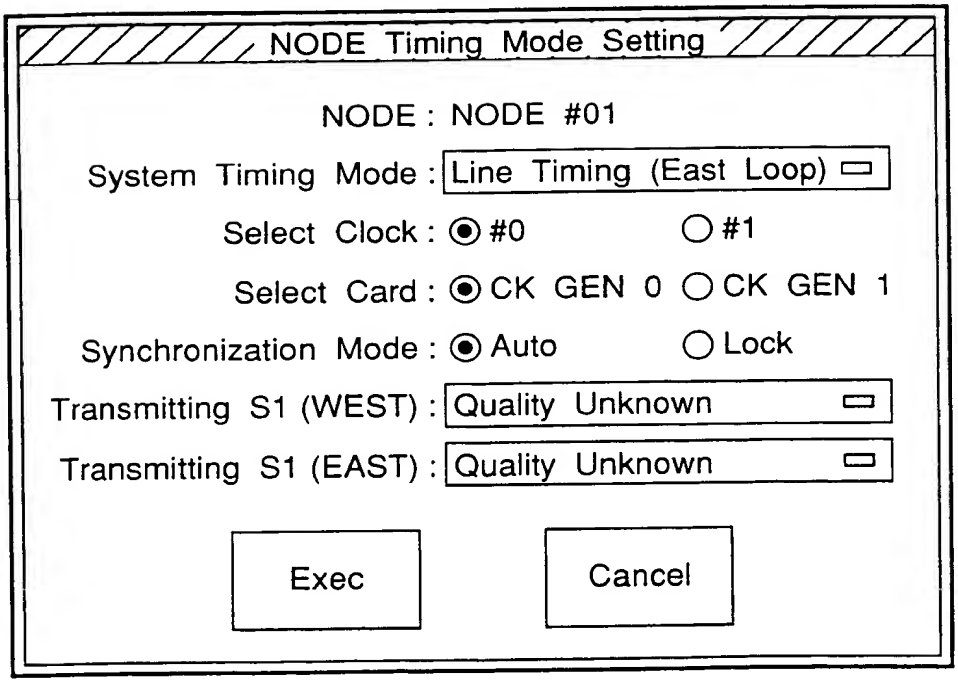

FIG. 106

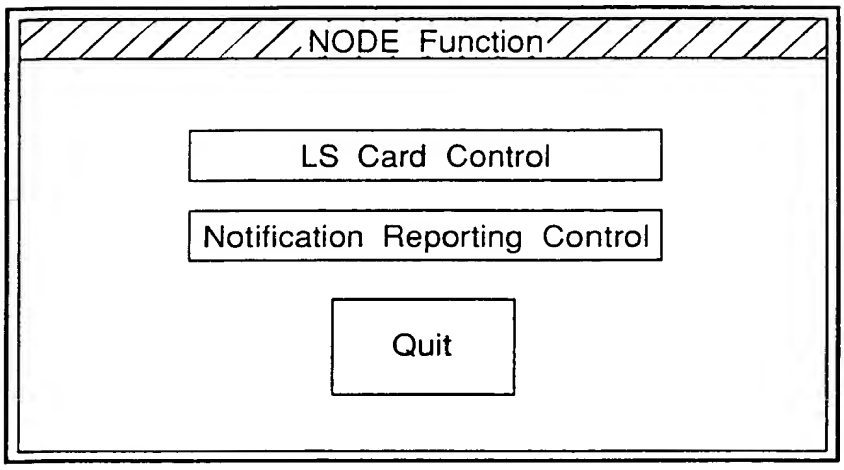

FIG. 107

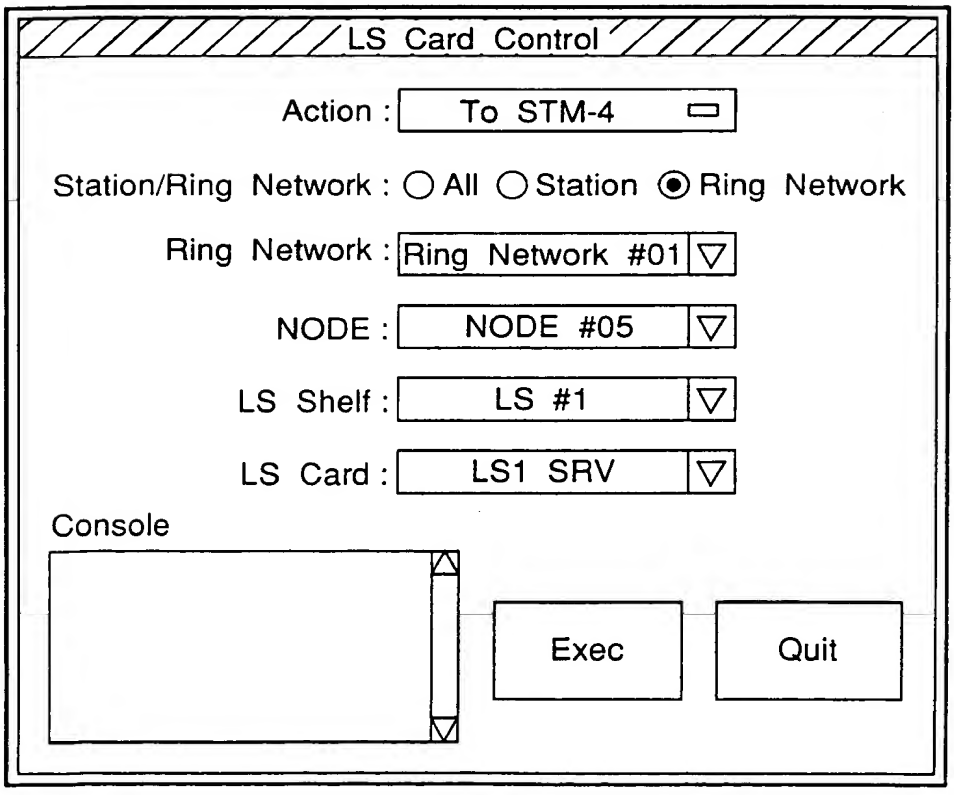

FIG. 108